THE LANCET.

No. 4408. Vol. CLXXIV. LONDON, SATURDAY, FEBRUARY 22, 1908. [Pp. 120+40.

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Erasmus Wilson Lecture

ON

THE PYOGENETIC ACTIVITIES OF THE PNEUMOCOCCUS.

Delivered before the Royal College of Surgeons of England on Feb. 12th, 1908,

BY J. W. H. EYRE, M.D., M.S. DURH., M.R.C.S. ENG., D.P.H. CAMB.,

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INTRODUCTION.

GENTLEMEN,—In 1881 Ogston of Aberdeen published an account of his observations upon the microscopical constituents of surgical pus which enabled him to state that minute spherical bodies, "micrococci," were usually present in this pathological product of infected wounds. Moreover, he differentiated these cocci into those occurring in irregular masses—"grouped micrococci"—which were usually associated with circumscribed abscess formation, and those which occurred in rows like strings of beads—"chain micrococci"—which were usually found in connexion with the spreading "cellulitis" type of suppuration. Three years later Rosenbach published the results of his investigations which fully confirmed the earlier observations of Ogston. This second worker succeeded in isolating staphylococci and streptococci, as they were now termed, cultivated them upon artificial media in the laboratory, and differentiated some of the several varieties included in this first general morphological classification. For the next decade, no matter in what situation or association it presented itself, pus was pretty generally regarded as the outcome of infection by members of the staphylococcus and streptococcus "pyogenes" groups—a result largely due to a too literal interpretation of Koch's dicta, which laid it down that in order to establish a claim for the specificity of any newly discovered bacterium, that organism must be shown to be constantly present in some particular and definite lesion; must be capable of isolation and cultivation outside the animal body; and on its reintroduction into a suitable host must *reproduce the original lesion*. Hence as the specific etiological factors of the various bacterial infections were recognised and isolated attention was invariably first directed to the reproduction of the original lesions in their entirety, and subsidiary phenomena such as the provocation of pus formation were entirely disregarded, or, again instancing the formation of pus, regarded merely as the result of accidental and preventable contamination with the so-called "pyogenic" cocci already referred to. And it is only within recent years, since, in fact, the inter-reactions of seed and soil, of bacterial irritant and tissue cell, have been the subjects of extended study that the principle has been generally recognised that practically any and every pathogenic bacterium possesses the power, under some certain combination of factors, of initiating purely pyogenic processes in place of, or in addition to, its particular specific lesion.

Perhaps the most striking illustration of the above statements that can be adduced is afforded by a study of that organism which forms the subject for our present consideration. First studied in its association with one form of inflammatory reaction in pulmonary tissue—viz., acute croupous or lobar pneumonia—its specificity in this connexion was conclusively established before its potentialities in other directions received any but the scantiest consideration. Indeed, it is not so many years ago that the definite statement was made—in all sincerity and as representing the established conviction of a large body of observers—that the pneumococcus was of itself never responsible for the formation of pus, and despite the fact that the presence of the pneumococcus could so readily be demonstrated in those purulent collections within the pleural cavity that are frequently associated with pneumonia, such empyemata were invariably regarded as the direct result of secondary infection with some one or more of the ordinary pyogenic staphylococci or streptococci. The pyogenetic activities of the pneumococcus itself have, however, now been demonstrated experimentally in so complete a manner that the present seems a fitting opportunity to review our knowledge of the subject upon which present-day opinions are based.

HISTORICAL SUMMARY.

The micro-organism I have chosen for the subject of my lecture was first discovered by Sternberg in September, 1880, in the course of some investigations on malarial fever. By means of inoculation experiments he found that his own saliva was pathogenic for rabbits and he isolated a definite diplococcus, which he considered the cause of such pathogenicity, and to it gave the name "micrococcus Pasteuri." This he described in a report to the National Board of Health (U.S.A.), which, however, was not then published but to which he refers in the National Board of Health Bulletin of April, 1881.

In January, 1881, during a discussion following the reading of a paper ("Recherches Expérimentales sur la Transmission du Virus Rabique de l'Homme au Lapin," par MM. Raynaud et Lannelogue, Jan. 18th, 1881) before the Paris Academy of Medicine, Pasteur stated that in December, 1880, he inoculated two rabbits with saliva from a fatal case of hydrophobia, that of a boy, four hours after death. The rabbits died in 36 hours and a new bacterium was discovered in their blood shaped like the figure 8 and surrounded by a gelatinous capsule. It was virulent in broth cultures where it often formed chains. He expressed his ignorance of its relation to rabies but distinguished between the new organism and his "vibrion septique"—i.e., the bacillus of malignant œdema. For the next few months communications were made to the Academy in rapid succession confirming these observations, and a commission was appointed to investigate the subject. Pasteur reported to this commission in April, 1881, that he had found the new organism in the saliva of one more fatal case of rabies and three fatal cases of broncho-pneumonia, and had failed to find it in the saliva of three persons dead from other diseases.

Vulpian (1881) stated that he had found the micro-organism in a virulent condition in the saliva of healthy individuals.

In 1881 also Ebert and Koch and in the following year Friedländer, Leyden, and Günther demonstrated microscopically the constant presence of a diplococcus in the lungs in cases of lobar pneumonia. The two latter, moreover, described the surrounding capsule as being present in specimens made from the fluid drawn from the hepatised lung itself during life by means of a sterile syringe, but they were unsuccessful in obtaining pure cultures of the organism.

In 1883 Matray and Ziehl studied cases of pneumonia and fully confirmed these observations.

In the meantime, and on the experimental side Griffini and Cambray inoculated rabbits with pneumonic sputum and regularly produced a fatal septicæmia; continuing their experiments they were equally successful in reproducing the septicæmia in other rabbits by using for the purpose of inoculation blood taken from the original rabbits after death.

In November, 1883, Friedländer described cultures upon solid media of what he considered to be the pneumococcus. He stated that his organism was an oval coccus, surrounded by a gelatinous capsule, which readily grew on gelatin at the ordinary room temperature. These observations gave a great impetus to the bacteriological study of croupous pneumonia by the modern methods, although we are now aware that Friedländer's "oval coccus" was in truth a bacillus and in no way concerned in the causation of the disease.

Two months later (1884) before the Société Anatomique Talamon described cultivations in bouillon of the genuine diplococcus and showed cultures grown at the body temperature from pneumonic exudates. Two of these cultivations were absolutely pure. Of 20 rabbits inoculated into the chest cavity with these cultures 16 died from septicæmia, often accompanied by fibrinous pleurisy and pericarditis, and sometimes by a true lobar pneumonia. The blood and exudates of these fatal cases always contained cocci, and yielded pure cultures capable of producing similar inoculation results. Guinea-pigs and dogs, he stated, were immune. He had also found the coccus in fluid drawn during life from the hepatised lung—in man—in eight cases. In one fatal case it occurred in the general circulation at the moment of death.

As Friedländer and Talamon were working with two distinct organisms a good deal of confusion resulted from their conflicting statements. As an example of this Sternberg in April, 1885, read a paper before the Pathological Society of Philadelphia, pointing out the identity of the coccus

which he had discovered in 1880 in his own saliva with the coccus which he had more recently isolated in cases of lobar pneumonia, but fell into the error of supposing it to be identical also with Friedländer's micro-organism. All this confusion and misunderstanding was, however, cleared up by the researches of Fraenkel, who in April (before the Congress für Innere Medicin, Berlin) and July, 1885, independently recognised the identity of Sternberg's coccus of sputum septicæmia with the pneumococcus, and quoted three cases of lobar pneumonia from which he had cultivated it on *solid media*. In communications during the course of the following year he published fuller accounts of his observations and gave differential descriptions of the pneumococcus and Friedländer's pneumobacillus.

In May, 1886, Weichselbaum communicated to the Gesellschaft für Aerzte (Vienna) a report to the effect that he had examined the exudate from 129 cases of pulmonary inflammation, of which 94 were undoubted lobar pneumonia and from which he cultivated the pneumococcus. In 21 of the same series he isolated a streptococcus and from nine cases only did he obtain Friedländer's pneumobacillus.

Early observers, as I have previously remarked, adhered rigidly to the postulates of Koch and attempted to prove that the action of the pneumococcus was special and specific and that its pathogenic properties were always, and solely, directed to the production of a special form of pulmonary inflammation which resulted in the consolidation of considerable areas of the lung tissue. When, however, they attempted to reproduce this lesion in laboratory animals it was found that the experimental animals rapidly succumbed to a general septicæmia, unaccompanied by lobar pneumonia, and it was necessary to continue the investigations until a combination of conditions sufficiently comparable to that obtaining in man was discovered, when the experimental infection resulted in the production of lobar pneumonia. This combination of conditions was finally obtained by Gamaleia (1888) working in the Pasteur Institute, for by employing sheep and dogs for his inoculation experiments he was successful in reproducing the typical pathological lesions of acute lobar pneumonia.

During the early inquiries into the life-history of the pneumococcus each worker, almost, applied to the organism a different title. The chief of these were as follows:—

1. Micrococcus Pasteuri	Sternberg.
2. Micrococcus pneumoniæ crouposæ	,,
3. Microbe septicémique de salive	Pasteur.
4. Coccus lanceolatus	Talamon.
5. Coccus of sputum septicæmia	Fraenkel.
6. Bacillus septicus sputigenus	Flügge.
7. Bacillus salivarius septicus	Biondi.
8. Diplococcus pneumoniæ	Weichselbaum.
9. Diplobacillus pneumoniæ	Fraenkel and Weichselbaum.
10. Pneumococcus	,,
11. Pneumonia coccus	,,
12. Meningococcus	Foà and Bordoni-Uffreduzzi.
13. Micrococcus lanceolatus capsulatus	,,
14. Diplococcus lanceolatus capsulatus	,,
15. Diplococcus lanceolatus fibrinogenicus ...	,,
16. Diplococcus lanceolatus œdematogenicus	,,
17. Gleococcus of Fraenkel	Klebs.
18. Streptococcus lanceolatus Pasteuri	Gamaleia.

Of this formidable list only three have obtained any vogue—viz., pneumococcus, diplococcus pneumoniæ, and streptococcus lanceolatus. The last-named has the advantage of accurately describing the organism and is the title preferred by the purist. The first possesses the virtue of brevity, is the one in commonest colloquial use, and is the one that will be adhered to throughout the present paper.

So far all the investigations had been directed to the association of the pneumococcus with lobar pneumonia, but now that the causal nature of the association of the organism with this disease had been firmly established clinical observations concerning manifestations of the pathogenetic properties of the pneumococcus other than, but frequently associated with or following, lobar pneumonia gradually accumulated. For instance, Foà and Carbone (1894) encountered lesions in the human subject which, although apparently all due to invasion of the tissues by the pneumococcus, varied so widely in their histological characters that they felt compelled to recognise two distinct varieties or strains of this organism, which they designated respectively "œdematogenetic" and "fibrinogenetic"—descriptive adjuncts which sufficiently indicate the main histological characters of the lesions produced. The first they named the meningococcus and the second the pneumococcus.

As the numbers of workers increased, however, and animal experiments were multiplied it was found that—as in the case of other pathogenic bacteria—one and the same strain of pneumococcus could, by varying the conditions of experiments, be induced to produce widely varying lesions, while clinical observations showed the presence of the pneumococcus, obviously in a causal capacity, in very different pathological conditions.

SOME OF THE LESIONS DUE TO PNEUMOCOCCUS INFECTION.

Meningitis.—Foà and Bordoni-Uffreduzzi reported to the Royal Academy of Medicine, Turin, their observations on lanceolate diplococci which they had discovered in the exudation of cases of epidemic cerebro-spinal meningitis. They further identified this organism with Fraenkel's pneumococcus and published a most valuable study of its biological properties and cultural varieties. Many cases of meningitis associated with or following upon pneumonia have since been recorded by Weichselbaum, Netter, and others, and the disease has been frequently reproduced in the laboratory by means of subdural inoculations of the pneumococcus. At the same time, instances of primary infection of the central nervous system by the pneumococcus have accumulated, and when Wolff in 1897 carefully analysed the literature dealing with meningitis he found that the pneumococcus was recorded as the causative factor in over 40 per cent. of the total number of cases. Osler records a series of 93 cases of meningitis, of which over 22 per cent. were due to the pneumococcus. Brodie, Rogers, and Hamilton (1898), too, have described cerebro-spinal meningitis due to the pneumococcus consecutive to an epidemic form of rhinitis in African natives; and Turner, in a still more recent (1907) article notes the presence of 17 cases of pneumococcic meningitis (out of a series of 70 which were investigated bacteriologically) in natives employed in the Rand mines.

Ulcerative endocarditis.—Endocarditis usually affecting the aortic valve is frequently due to the pneumococcus. Both the vegetative and ulcerative varieties have been produced experimentally by Kruse, Pansini, Vanni, Netter, and others who, however, noted that unless some injury of the valve already existed an endocarditis could rarely be set up. The method usually adopted, therefore, was to pass a sterile probe down the carotid artery into the left ventricle and injure the valve, then to inject virulent broth cultures of the pneumococcus either directly into the heart or subcutaneously.

Suppurative pericarditis.—This is practically always consecutive to lobar pneumonia and pleurisy. Sometimes the exudation is sero-pus or serum containing large flakes of fibrin rather than ordinary pus. At other times the heart is enveloped in a thick membranous layer of fibrin-entangled pus cells and the visceral layer of the pericardium lined with a similar exudation, the two surfaces being separated by a perfectly clear serous fluid.

Pleurisy.—An exudation of clear serous fluid into the pleural cavity resulting from the extension of the pneumococcus through the lung to the visceral layer of the pleura is the commonest sequel of pneumonia, and at the same time, as it is usually readily reabsorbed and the pleura rarely requires opening, is the least important. Frequently, however, the pneumococcus multiplies rapidly in this fluid which then has a sero-purulent character and contains numerous large flakes of fibrin or may gradually merge into a fluid having all the appearance of ordinary pus. The pneumococcus, however, is often able to give rise to a serous or sero-purulent pleurisy quite apart from any antecedent of pneumonia, and this observation is of frequent occurrence in experimental inoculations into the trachea of the rabbit (through a catheter passed through the larynx). Under these conditions the pneumococcus may actually enter the lung, pass through the pulmonary tissues without leaving behind it any trace of inflammatory reaction, pass through the pleura, and reaching the pleural cavity produce a marked pleurisy which often extends to the enveloping membrane of the heart and causes a large collection of serous exudation within that sac. The frequency of the pneumococcus as the exciting cause of serous pleurisy is well shown in the following table, which includes those cases investigated bacteriologically in Guy's Hospital during the past five years—24 out of a total of 82, or a percentage of 29, being the result of the analysis.

TABLE I.—*Clear Fluid from the Pleural Cavity.*

—	1903.	1904.	1905.	1906.	1907.
Pneumococcus (pure).	2	5	10	3	4
Other organisms (excluding bacillus tuberculosis).	10	2	4	9	8
No growth (some certainly and some possibly due to bacillus tuberculosis and others probably due to pneumococcus).	6	2	6	15	20

Empyema.—Pus due to the activities of the pneumococcus is perhaps most familiar to the surgeon in the shape of empyemata. An analysis of the cases of empyema in Guy's Hospital investigated bacteriologically during the past five years shows that 77 per cent. are due to this organism alone.

TABLE II.—*Pus from the Pleural Cavity.*

—	1903.	1904.	1905.	1906.	1907.
Pneumococcus (pure).	10	20	28	16	21
Pneumococcus associated with other bacteria.	3	—	—	1	2
Other organisms (excludin bacillus tuberculosis).	2	4	3	3	8
No growth (some certainly and others probably due to bacillus tuberculosis).	2	2	1	2	3

The naked-eye characters of the purulent fluid are sometimes practically diagnostic. While the pus from cases of pneumococcic empyema or pneumococcic peritonitis may present the greenish yellow colour and creamy consistence of what used to be called laudable pus, it is more often a yellowish fluid of somewhat thinner consistence, which, although quite homogeneous when removed from the body, if collected in a test tube and allowed to stand soon undergoes auto-sedimentation and separates into two layers of about equal bulk, the lower yellow layer consisting of pus cells and the upper a translucent, opalescent fluid quite clear except, perhaps, for the presence of a few flakes of fibrin. The microscopical examination of the fluid is often very characteristic, showing in addition to the pneumococcus itself many involution forms, empty capsules, dead cocci, and deeply staining particles. The contention of the clinician that a pneumococcic empyema is always primarily purulent and that the serous pleurisy due to this organism never becomes purulent obtains very little support either from direct observation or from inoculation experiment. If in a series of intrapleural or intraperitoneal inoculations of the rabbit the conditions are so arranged that the experimental animals shall die at varying periods it will be found at the post-mortem inspection that where death has rapidly followed on the injection the exudation is clear serum teeming with pneumococci. If death is delayed to three, four, five, or more days every gradation in the character of the exudation, from clear serum, sero-pus to creamy pus, will be met with. In the same way the gradual change in the character of the fluid can be noted clinically in many cases if exploration of the chest is repeated from day to day.

Otitis media.—The pneumococcus has been frequently isolated from, and in many cases found in pure culture in, the pus of otitis media. Zufal (1888), who recorded many cases, was able to produce this disease experimentally by means of inoculations into the tympanic cavity.

Arthritis.—The pneumococcus has also been isolated from the serous or purulent exudation in mono- and poly-arthritis occurring either as a primary manifestation of pneumococcic septicæmia or during the course of a lobar pneumonia, the earliest cases being those described by Vogelius (1897). The sterno-clavicular joint, shoulder, hip, and knee are those most commonly affected. Gabbi produced arthritis experimentally by injuring joints, either by traumatism or the use of chemical irritants, and then inoculating virulent cultures of the pneumococcus subcutaneously.

Pneumococcic peritonitis.—Peritonitis due to the pneumococcus differs in character according to whether it occurs in adults or in children. In the former it is usually diffuse and observations are now accumulating which show that the appendix is not an uncommon point of departure. In children, on the other hand, the peritonitis is very frequently local in its distribution, being early shut off from the general cavity by fibrinous adhesions. Pneumococcic peritonitis was first noted (1890) by Sevestre. Dieulafoy collected a number of cases; and Bryant (1901) contributed a further series. Marchaux (1899) recorded vaginitis and peritonitis as common complications of pneumonia amongst natives in Africa.

Localised abscess formation.—Circumscribed collections of pus, subcutaneous, intramuscular or within some viscus, have often been described (e.g., Batten and Foulerton, 1901), and can readily be produced experimentally in laboratory animals.

Conjunctivitis, &c.—On the continent the pneumococcus is said to infect frequently the conjunctival sac, producing an acute conjunctivitis—often in epidemic form—but is not so commonly found in this situation in England. Gasparini has also recorded the pneumococcus as giving rise to keratohypopion.

Varia.—Finally, the pneumococcus has been recorded as causing, among other lesions, epiphysitis, osteomyelitis, periostitis and necrosis, thyreoiditis, parotitis, tonsillitis, follicular and membranous, gastritis, nephritis and perinephritis, endocervitis, &c.

Enough has been said to show the protean character of the lesions for which the pneumococcus has been recorded as the responsible cause. In order to explain the presence of the pneumococcus in the widely separated situations indicated by the foregoing summary it is necessary to consider for a moment how the organism gains access to the body tissues in the first instance. I have already mentioned that the pneumococcus was first discovered as the result of the examination of the saliva of a healthy individual. Sternberg records the organism as present in the same situation in 20 per cent. of the healthy persons examined; Netter in 15 per cent.; Washbourn and myself, in a limited number of individuals (20), in 30 per cent.; in a more extended series I have found it present in 18 per cent. It is also commonly found in the normal nose, its presence being recorded by Netter, Kurth and von Besser, and others—its percentage incidence being nearly 30 and the tonsillar crypts frequently harbour the coccus. In many instances the pneumococci isolated from these situations are of low virulence; indeed, sometimes they are avirulent, and at other times of a high degree of virulence. Washbourn and I carefully studied a number of them and found that even if the original virulence was low it could readily be exalted. A few varieties, however, were only exalted in virulence with great difficulty and then soon returned to their original condition. Hence the portal of entry is in the vast majority the respiratory tract and the cells of the upper air passages form the first line of defence. The pulmonary tissues constitute the second line of defence. Once arrived at the lung alveoli the pneumococcus readily enters the blood capillaries and so reaches the general circulation. In this situation if antibodies in sufficient quantity are available the invader is destroyed; short of this the cocci become deposited in areas of lowered bacterioscopic pressure and so give rise to localised infections, or multiplying in the blood stream produce a general septicæmia. Thus pneumonia may be regarded as a defensive process designed to prevent metastases or septicæmia. At its best, however, it is not absolutely efficient. Banti, Prochaska, and others maintain that pneumococci are invariably present in the blood in pneumonia and although years ago both Washbourn and myself were of opinion that the cocci only arrived at the peripheral circulation immediately prior to the fatal termination improved methods for the examination of the blood for the presence of micro-organisms lead me to believe that the cocci are present during the first two or three days of the disease even in the least severe cases of pneumonia. Next to the respiratory system the alimentary tract is probably the most common channel of entrance. Foulerton's case of gastritis and the numerous recorded cases of pneumococcic appendicitis place this method of infection beyond doubt. It is therefore easy to see how any organ or tissue may become the seat of pneumococcic infection. Finally, as affording a possible explanation of pneumococcic peritonitis occurring more commonly in the female than the male, Doyen records the presence of non-virulent pneumococci in the healthy vagina and cervix, and I have isolated the coccus from these situations in three instances—in two the organism

being of considerable virulence and in the third of very low virulence.

In order to gain some idea of the frequency with which the pneumococcus is met with in situations other than pulmonary tissue and of the frequency with which its presence provokes the formation of pus, I have examined the records of the bacteriological department of Guy's Hospital for the past five years. Arranged in tabular form, the results conclusively demonstrate the validity of the claim of the pneumococcus to be considered, potentially at any rate, a pyogenic coccus, for after subtracting seven cases of septicæmia, two of infective endocarditis, and 24 of pleurisy with clear fluid, we have no less than 168 instances—rather more than 1 per cent. of the total number of bacteriological specimens for the five-year period—where the presence of the pneumococcus had led to the formation of exudations possessing all the physical attributes of pus.

TABLE III.—*Pneumococcic Lesions other than Pneumonia.*

—	1903	1904	1905	1906	1907	Totals.
Septicæmia	1	2	1	1	2	7
Infective endocarditis	—	—	1	—	1	2
Purulent pericarditis	3	1	4	—	1	9
Purulent peritonitis (pure)	1	1	2	2	4	10
,, ,, (mixed)	—	1	—	—	—	1
Appendicular abscess (pure)	—	1	—	—	—	1
,, ,, (mixed)	—	1	2	1	—	4
Purulent meningitis	1	2	—	3	8	14
Empyema (pure)	10	20	28	16	21	95
,, (mixed)	3	—	—	1	2	6
Pleurisy	2	5	10	3	4	24
Osteomyelitis	—	—	—	—	1	1
Periostitis (femur)	—	1	—	—	—	1
Necrosis (rib)	—	—	1	—	—	1
Purulent arthritis, knee	—	—	1	—	4	5
,, ,, shoulder	—	—	1	—	1	2
,, ,, hip	—	—	—	—	1	1
Abscess, cerebrum	—	—	1	1	—	2
,, cerebellum	—	—	1	—	—	1
,, mastoid	—	—	2	—	3	5
,, liver	—	—	—	1	—	1
,, pelvis	—	—	—	—	1	1
,, lacrymal sac	—	—	—	—	1	1
,, (subcutaneous), thigh	—	—	1	—	1	2
,, ,, back	—	—	—	—	1	1
,, ,, scalp	—	1	—	—	—	1
,, ,, sacrum	1	—	—	—	—	1
Conjunctivitis	—	—	1	—	—	1
Total	22	36	57	29	57	201
Total specimens examined	1065	1083	1933	4050	6301	14432

I have carefully excluded from the above table all cases in which the identity of the pneumococcus isolated from the pus was not completely established by methods above criticism, and in this connexion I would deprecate the diagnosis of "pneumococcic" suppuration by microscopical examination of stained films alone. It is far from rare when inquiring as to the attributes of the strain of pneumococcus implicated to find that the diagnosis rests on the slender foundation of the observation of "diplococci" in the pus, regardless of the fact that the pneumococcus is not by any means the only organism which assumes this morphological character in morbid exudates. The streptococcus very frequently, and the staphylococcus aureus and also staphylococcus albus by no means rarely, assume this type of division under similar conditions. Nor is the term "capsulated" as applied by observers who are satisfied with such cursory examination any more convincing, for often the note that this anatomical peculiarity of the pneumococcus is present will be found to depend solely on the "negative" evidence of an unstained halo—such as is so frequently due to the contraction of rapidly dried serum from the periphery of the paired coccus—around the organism, which halo, be it noted, will probably be found surrounding nearly every particle of dirt on the same slide.

ATTRIBUTES OF THE PNEUMOCOCCUS.

Consequently it will be well to recapitulate briefly now those essential characteristics of the pneumococcus which are deemed necessary by the bacteriologist to establish its identity—although I may at once say I have no intention of entering minutely here into the laboratory habits of this micro-organism. Incidentally it must be mentioned that for convenience of reference the particular pneumococcus isolated from each individual is designated by a name, letter, or number prefixed by the word "race," or better "strain," and when a number of strains are found to possess similar characteristics they are grouped together under the heading of "Type."

Characteristics of the Pneumococcus.

Technically described the pneumococcus is an aerobic, facultative anaerobic, non-motile, highly parasitic coccus occurring in body fluids as pairs, of which the individual members are lanceolate or "candle-flame" shaped, with the rounded bases in apposition, and surrounded by a mucinous capsule which can be positively demonstrated by MacConkey's, Muir's, or one of Hiss's staining methods; or as short chains, also capsulated; occurring in artificial cultivations as more nearly spherical bodies in pairs or short or long chains; staining with the ordinary aniline dyes and not decolourised by Gram's method; growing upon artificial nutrient media at the temperature of the body only, but not upon gelatin at 20° C. (Certain saprophytic forms devoid of virulence, or practically so, are capable of multiplication at temperatures approximating to what is spoken of as room temperature—i.e., 20° to 22° C.—but with these races we are not at present concerned.) Multiplying in broth of reaction varying from + 12 to + 6 with the production of a uniform turbidity; in litmus milk with the production of an acid reaction, occasionally accompanied by clotting; upon agar and inspissated serum as translucent discrete circular, hemispherical or slightly flattened colonies; upon agar over the surface of which sterile rabbits' or human blood has been smeared, in similar manner but more freely than upon ordinary agar, and accompanied by a discolouration of the blood due to the transformation of the oxyhæmoglobin to methæmoglobin, which is an almost pathognomonic feature of the growth of this coccus; and in the serum of animals that have been immunised to the pneumococcus in the form of a flocculent deposit in an otherwise clear fluid, the flocculi being composed of felted masses of long and convoluted chains of pneumococci.

Finally, and most important of all, is the fact that a pneumococcus isolated *from a definite lesion* in the human subject is markedly pathogenic for the rabbit. Speaking generally, if injected into the peritoneal cavity of this animal it will produce an acute septicæmia and cause the death of the animal in one, two, three, or four days, while the organism can be recovered from the blood of the general circulation and from all the organs in a state of purity. The dose usually employed for this purpose is the entire growth from the surface of one 24-hours-old blood agar tube cultivation emulsified in one cubic centimetre of broth. Usually a dose many thousand times smaller than this suffices, but I have never yet found it necessary to employ a larger one.

Interesting but of minor importance from the point of view of identity is the power possessed by the pneumococcus of splitting up certain carbohydrate substances when these are dissolved in the medium in which the organism is growing. The substances generally used in these tests are dextrose, lævulose, galactose, lactose, saccharose, maltose, mannite, dextrin, and inulin. The first six of these are always acted upon by the pneumococcus, and if the medium, originally neutral in reaction, is tinted with litmus solution, the activity of the pneumococcus is indicated by the change in colour associated with the presence of an acid reaction. The remaining three compounds are sometimes but not invariably "fermented" by the organism under discussion, hence the contention of some American observers that the fermentation of inulin by the pneumococcus is so constant a character as to be of the highest value in diagnosis is not borne out in every-day work.

Having indicated the general characters of the cocci isolated from the varied *materies morbi* already tabulated the question that next arises is how to explain the varying pathogenetic properties exhibited by the pneumococcus. Before referring to the experimental work which has been

carried out in the attempts to answer satisfactorily this question I would remind you of the essential factors that are concerned in this question of infection, or of immunity if you prefer to regard it from the standpoint of the defenders rather than that of the invaders. Briefly, those factors which we shall now deal with here are: (1) the type of the organism; (2) the virulence of the organism; (3) the numbers of the infecting organism; and (4) the defensive powers of the invaded tissues, e.g., the resistance or the susceptibility of the animal cell or of the invaded individual.

Types of Coccus.

During some of our observations upon the natural history of the pneumococcus Washbourn and I noted that although all strains of virulent pneumococci produced a rapidly fatal septicæmia when introduced into the peritoneal cavity of the rabbit, yet if the injection was made into the subcutaneous tissue the various strains frequently presented striking differences in the histological characters of the local lesions they produced. Thus in the case of strains recovered from the hepatised lung in cases of pneumonia, fibrinous exudation formed the bulk of the material at the site of inoculation; while when strains isolated from broncho-pneumonia and from suppurative lesions were injected the local reaction consisted mainly of accumulations of polymorphonuclear leucocytes. These two types of cocci which we referred to as the "fibrinous" and the "cellular" types respectively agreed in some measure with those previously described by Foà and the hope was raised that the existence of two distinct and fixed varieties of pneumococci would afford an explanation of the differing clinical phenomena provoked by the invasion of human tissues by this organism in general, and in particular of the occurrence of acute septicæmia on the one hand and of pus formation on the other. Such, however, was not the case, for it was soon found when the experiments were carried further that by varying the conditions of the experiment either type was capable of giving rise to pus formation or to septicæmia. As an example of the different results obtained by varying one factor of the experiment—viz., the resistance of the tissue cell—I may instance the infection of the subcutaneous tissue of the abdomen of the rabbit.

(*a*) If we select for the experiment a young rabbit we find that a small dose of either of these types of the pneumococcus will cause death within 48 hours from acute pneumococcic septicæmia. At the seat of inoculation the reaction, usually small in amount and limited in area, is practically always œdematous in character, and either of the serous, sero-hæmorrhagic, or more rarely the hæmorrhagic type.

(*b*) If, however, we substitute a half-grown rabbit and inject a similar dose of the same cultivation the animal survives for a much longer period, say three or four days, or even a week. Now the local reaction at the seat of infection is a much more extensive process and clearly indicates by both its macroscopical and microscopical characters the particular "type" of pneumococcus that has been employed to produce the infection. It may be either a firm gelatinous exudation consisting of fibrin and leucocytes, together with red blood discs, thrown out and occupying the subcutaneous cellular tissue for a considerable distance around the needle puncture, frequently, indeed, extending down to the peritoneum below; or else a dense, opaque, yellowish exudation consisting almost entirely of small round cells, fibrin being almost entirely absent.

(*c*) Finally, if a fully grown animal is infected with a similar dose of either type the local lesion at the seat of inoculation consists of a larger or smaller circumscribed œdema, usually noticed within 24 hours of infection, which enlarges slightly during the next few days, though remaining strictly localised, becomes soft, and in about ten days contains pus and can be made to fluctuate. If untreated the skin over the abscess undergoes necrosis, sloughs, and gives exit to a thick creamy yellowish pus literally teeming with pneumococci and the animal dies from exhaustion in a fortnight or so, or in some few instances completely recovers.

Again by varying the site of inoculation and introducing the organism either into the peritoneal cavity or directly into the general circulation each type of pneumococcus would produce an acute septicæmic infection irrespectively of the age of the experimental rabbits.

From the clinical aspect exceptions were numerous and it was found that the fibrinous type of pneumococcus was as often isolated from purulent collections unassociated with pneumonitis as the cellular type.

DEGREES OF VIRULENCE.

Then, too, in our early observations Washbourn and myself found that pneumococci isolated from pathological processes in man invariably possessed a certain amount of virulence for the rabbit and so constituted the virulent type of pneumococcus; on the other hand, some strains of pneumococci isolated from various situations in the healthy body were devoid of virulence for that rodent and constituted the aviralent type; whilst between these two extremes every grade of virulence could be recognised. Here again an obvious explanation for the various lesions produced in man as the result of infection by the pneumococcus seemed to be forthcoming and it was at once put to the test. Strains of pneumococci were isolated from various situations and from exudates of very different naked-eye characters and their virulence was tested. The usual rough-and-ready method of estimating virulence by observing the amount of a 24-hours-old broth culture of the organism under investigation needed to produce any given result did not appeal to us, as among other peculiarities of the highly parasitic pneumococcus it does not usually grow well in this medium and when it does it varies from time to time in its rate of growth and moreover rapidly loses its virulence. Cultivations upon blood agar which had previously been described by Washbourn and myself as particularly adapted for the purpose of maintaining the virulence were therefore employed and a more accurate method of estimating the size of the doses, in which a specially manufactured and calibrated loop was always used to remove the growth from the medium was devised. Briefly our method was as follows. One loopful of the 24-hours-old growth at 37° C. was taken from the surface of the blood-agar and thoroughly emulsified in a known quantity (10 cubic centimetres) of sterile broth or saline solution, in a suitable vessel. It was then easy to prepare dilutions, in tenths, of the original loopful by measuring the requisite fractions of this emulsion in sterile graduated pipettes, transferring them to other vessels and adding more saline solution to any desired volume. Thus a series of rabbits could be inoculated with decreasing amounts of the pneumococcus cultivation and the minimal lethal dose ascertained.

The accompanying table shows such a series of inoculations of a strain known as strain "Sudbury," which was originally isolated from the rusty sputum of a case of lobar pneumonia.

TABLE IV.—*Determination of the Minimal Lethal Dose of the Pneumococcus (Strain "Sudbury").*

Rabbit.	Dose of culture.	Method of injection.	Result.
No. 1	1 loopful.	Intraperitoneally.	Death in 18 hours.
,, 2	0·1 ,,	,,	,, 24 ,,
,, 3	0·01 ,,	,,	,, 48 ,,
,, 4	0·001 ,,	,,	,, 3 days.
,, 5	0·0001 ,,	,,	,, 3 ,,
,, 6	0·00001 ,,	,,	,, 7 ,,
,, 7	0·000001 ,,	,,	,, 7 ,,
,, 8	0·0000001 ,,	,,	Unaffected.
,, 9	0·00000001 ,,	,,	,,

It was soon found that the different strains of pneumococci differed markedly in their virulence. Of some when first isolaed it was necessary to inject an entire blood agar culture to kill the animal. Others, again, were fatal in doses corresponding to one-millionth part of a loop. Usually it was found that even those of comparatively slight virulence would after one or two passages through animals be so enhanced in virulence that the very minute dose just mentioned—the one-millionth part of a loop—now proved to be the minimal lethal dose. Consequently such a degree of virulence came to be regarded as the standard, and a pneumococcus which was fatal in doses of 0·000001 of a loop was spoken of as possessing "standard virulence."

The method already described for estimating the virulence of any given strain of pneumococcus not only enables the bulk of the dose to be measured in terms of a loop with some degree of accuracy but also gives a fairly close approximation to the actual number of cocci contained in at least the smaller doses. For example, working with a pneumococcus of standard virulence it was found that the minimal lethal

TABLE V.—*Initial Virulence of Various Strains of Pneumococci.*

No.	Sex.	Age.	Pneumococcus isolated from—	Minimal lethal dose.	Clinical result.
1	M.	30	Peripheral blood.	0·000001 loop.	Death.
2	F.	22	,, ,,	0·00001 ,,	,,
3	M.	26	,, ,,	1·0 ,,	,,
4	M.	36	Heart blood.	0·000001 ,,	,,
5	F.	18	,, ,,	0·01 ,,	,,
6	M.	26	,, ,,	0·01 ,,	,,
7	F.	20	,, ,,	2·0 ,,	,,
8	F.	18	,, ,,	0·001 ,,	,,
9	F.	42	Vegetations on valve.	0·01 ,,	,,
10	F.	$\frac{1}{12}$	Peritoneal pus.	0·000001 ,,	Recovery.
11	M.	3	,, ,,	0·000001 ,,	Death.
12	F.	2	,, ,,	0·000001 ,,	,,
13	F.	8	,, ,,	0·000001 ,,	Recovery.
14	F.	18	,, ,,	0·001 ,,	,,
15	M.	15	,, ,,	0·001 ,,	Death.
16	M.	24	,, ,,	0·1 ,,	Recovery.
17	M.	30	,, ,,	1·0 ,,	,,
18	F.	26	,, ,,	2·0 ,,	,,
19	F.	18	Cerebro-spinal pus.	0·000001 ,,	Death.
20	M.	6	,, ,,	0·001 ,,	,,
21	F.	3	,, ,,	0·001 ,,	,,
22	M.	$\frac{11}{12}$	,, ,,	1·0 ,,	,,
23	M.	16	,, ,,	1 entire culture.	,,
24	M.	36	Pus from chest.	0·000001 loop.	Recovery.
25	M.	45	,, ,,	0·000001 ,,	,,
26	F.	22	,, ,,	0·000001 ,,	,,
27	M.	10	,, ,,	0·000001 ,,	,,
28	F.	10	,, ,,	0·00001 ,,	,,
29	M.	3	,, ,,	0·00001 ,,	Death.
30	M.	$1\frac{6}{12}$	,, ,,	0·1 ,,	Recovery.
31	M.	27	,, ,,	1·0 ,,	,,
32	F.	12	,, ,,	1 entire culture.	,,
33	M.	30	,, ,,	1 entire culture.	,,
34	M.	22	Fluid from chest.	0·000001 loop.	,,
35	M.	30	,, ,,	0·000001 ,,	,,
36	M.	18	,, ,,	0·000001 ,,	,,
37	F.	19	,, ,,	1·0 ,,	,,
38	M.	7	Pus from knee.	0·000001 ,,	,,
39	M.	5	,, ,, shoulder.	0·000001 ,,	,,
40	F.	9	,, ,, knee.	0·00001 ,,	Death.
41	M.	3	,, ,, hip.	0·01 ,,	Recovery.
42	F.	5	Pus from cerebral abscess.	0·00001 ,,	Death.
43	F.	15	Pus from subcutaneous abscess.	0·001 ,,	Recovery.
44	F.	3	Pus from subcutaneous abscess.	2 loops.	,,
45	F.	46	Rusty sputum.	0·000001 loop.	,,
46	F.	50	,, ,,	0·000001 ,,	Death.
47	M.	24	,, ,,	0·001 ,,	Recovery.
48	M.	36	,, ,,	1·0 ,,	,,
49	M.	45	Lung juice.	0·000001 ,,	Death.
50	F.	45	,, ,,	0·000001 ,,	,,
51	M.	38	,, ,,	2·0 ,,	,,
52	F.	28	,, ,,	1 entire culture.	,,
53	M.	$\frac{6}{12}$	,, ,,	0·000001 loop.	,,
54	M.	$\frac{7}{12}$	,, ,,	0·000001 ,,	,,
55	M.	$1\frac{6}{12}$	,, ,,	0·000001 ,,	,,
56	M.	$1\frac{6}{12}$	,, ,,	0·000001 ,,	,,
57	M.	$\frac{7}{12}$	,, ,,	0·000001 ,,	,,
58	F.	2	,, ,,	0·001 ,,	,,
59	F.	$1\frac{7}{12}$	,, ,,	0·01 ,,	,,
60	M.	1	,, ,,	1·0 ,,	,,
61	M.	1	,, ,,	1·0 ,,	,,

dose was either 0·000001 or 0·0000001 of a loopful, and control plate cultivations made with that quantity of the emulsion corresponding to 0·000001 showed that sometimes it contained 200 cocci, sometimes 20. If it contained 200 cocci the minimal lethal dose was 0·0000001 of a loop; if it only contained 20 the animal that received 0·0000001 of a loop was usually unaffected, and 0·000001 of a loop proved to be the minimal fatal dose.

Now in the experiments already quoted the introduction of the pneumococcus into the subcutaneous tissues of an animal of but feeble resisting power—i.e., the young rabbit—was followed by acute and rapidly fatal septicæmia, while the same organism similarly used to infect an animal of greater resistance—i.e., the full-grown rabbit—led to the formation of a localised collection of pus. Conversely, it seemed possible that septicæmia in the adult—I purposely specify the adult in order to avoid touching upon the question of greater susceptibility in the infant and the aged—would be the result of infection by a pneumococcus of extremely high virulence, while pus formation would be due to the inroads of attenuated pneumococci. Sometimes this does obtain. For instance, a recent case of primary peritonitis yielded a pure culture of a pneumococcus the virulence of which was so low that two loopfuls of the optimum cultivation were required to produce fatal infection in the rabbit, whilst a morphologically identical pneumococcus from a fatal case of septicæmia was of standard virulence—that is to say, was two million times as powerful. Now, supposing it were possible to apply the results of these observations without reservation to pneumococcic infections in man, it should be a simple matter, given the nature of the lesion produced, to forecast the approximate virulence of the strain of coccus isolated; or, given the virulence of the organism, to predict the characters of the lesion that would follow its introduction into human tissues. Thus the pneumococcus of high virulence should produce septicæmia and the pneumococcus of low virulence should induce the formation of pus. But, on the other hand, two strains of pneumococci of equal and standard virulence were isolated from two cases which differed widely in the clinical manifestations, the one being a chronic otitis media, the other being a fatal case of pneumonia, suppurative pericarditis, and suppurative cerebro-spinal meningitis. However, the hypothesis I have suggested was put to the test and a large number of strains isolated and the virulence of each estimated, with the result that it proved untenable, for the simple reason that no constant relationship could be shown to exist between any given pathological manifestation of pneumococcic activity and either high, low, or medium virulence. The general results obtained will be readily appreciated from the accompanying details which are arranged in tabular form.

SIZE OF DOSE.

The next point to which my attention was directed was the relationship, if any, that existed between the size of the dose of infective material—or if you prefer it the number of pneumococci injected—and the character of the resulting lesion. Under certain conditions it was found that the size of the dose exercises a direct bearing upon the subsequent lesion—a result which was arrived at in a manner illustrated by the following example. In this experiment full-grown male rabbits were injected with cocci from one and the same

TABLE VI.—*Minimal Lethal Dose 0·000001 loop. Virulence Attenuated by Four Successive Subcultivations upon Ordinary Agar. (Pneumococcus Strain "Hunt.")*

Rabbit.	Sex.	Weight in grammes.	Dose of pneumococcus.	Method of infection.	Lesion.	Result.
No. 31	M.	1230	0·0000001	Subcutaneously.	Transient local œdema.	Unaffected.
,, 32	M.	1250	0·000001	,,	Localised abscess; necrosis of skin; raw, granulating surface.	Death in 18 days.
,, 33	M.	1280	0·001	,,	,,	Death in 12 days.
,, 34	M	1300	1 loop.	,,	Limited fibrinous exudation; pneumococcic septicæmia.	Death in 72 hours.

Note.—0·000001 loop contained 200 pneumococci.

cultivation of a strain of pneumococcus (which had been isolated from the lung juice of a fatal case of lobar pneumonia). The factor that was wittingly varied was the *size* of the dose. The first rabbit received approximately 20 cocci, the next 200, the next 200,000, and the last 200,000,000.

CELL RESISTANCE.

Having investigated the various phases of pneumococcic infection with reference to (1) the biological type and (2) the virulence of the organism concerned, and, incidentally (3), the magnitude of the infective dose without obtaining any satisfactory explanation of the disease lesions produced in man by the invasion of his tissues by the one morphological entity, the pneumococcus, it still remains to inquire into the possibility of the resistance of the cell being the most important factor, and I may say at once that in this direction undoubtedly lies the solution we are seeking. Experimental work had already pointed to the importance of this factor. Indeed, most of the instances which I have already adduced in illustration of the action of the other factors in the problem have also demonstrated to a greater or less degree the influence of this the most important factor. Thus we have seen how the pneumococcus which in the young and immature rabbit is able to produce a rapidly fatal septicæmia, in the adult and fully formed rabbit remains localised to the seat of inoculation, and is at most only able to give rise to a circumscribed collection of pus.

The rabbit forms the subject of the bulk of the pneumococcus experiments, because it is certainly the most susceptible of all the laboratory animals to infection by this organism. The young rabbit is infected with the greatest ease, half-grown animals are slightly more resistant, and fully grown and mature ones are more resistant still, but even in the normal adult rabbit the resistance offered to the pneumococcus is very slight, and that resistance varies to no appreciable degree in different individuals. Now in the process of immunisation the method that gives the most satisfactory results is the preliminary intravenous injection on two or three suitable occasions of "killed" broth cultivations of the pneumococcus. This proceeding is found to confer a certain slight degree of immunity upon the animal, which now survives the introduction of several times the minimal lethal dose of *living* cocci into its subcutaneous tissues, but, and this is the point I wish to emphasise, a small circumscribed abscess almost invariably forms at the seat of inoculation. If this is untreated it bursts, discharges its pus, and then the cavity closes by granulating up. When completely healed the animal is found to be highly resistant to subsequent injections of living cocci.

Many experiments were undertaken in the attempt to devise some means of measuring the resistance offered by the living cell to the onslaughts of the pneumococcus, and in the course of these advantage was taken of the fact already referred to that the pneumococcus when grown in *immune serum*—that is to say, the serum of an immune animal—became agglomerated into masses of convoluted chains which formed flocculi in an otherwise clear fluid, in short because agglutinated. In the course of these observations the serum from the healthy individual of several varieties of mammals was examined as well as that of highly immunised animals of various species, and also serum from subjects suffering or convalescent from natural or experimental pneumococcic infections, and, speaking generally, the constancy of the phenomenon was established. Many other observers, particularly Issalf and Arkharow, also noted the peculiar features of growth in immune sera; indeed, Bezançon and Griffon endeavoured to utilise the agglutinins present in the blood of infected individuals as a method of diagnosis. Pneumococcus agglutinins, however, are only formed in small quantities and for a limited period, and rapidly disappear from the serum, so that it is difficult not only to measure their amount but also, in many instances, to demonstrate their existence, so that for clinical purposes the agglutination reaction in pneumococcic infections has but a very restricted application.

Next the bactericidal action of normal and of immune serum was carefully investigated, and while the observations of Baring and Nissen and Kruse and Pansini relating to the absence of bactericidal substances from the serum of the normal rabbit were fully confirmed it was further found that the serum of immunised animals varied considerably in this respect in that sometimes bactericidal substances were present in considerable amount, although on the other hand they were frequently absent or present only in amounts too minute to be appreciated. Mennes, however, pursuing this line of investigation, found that while the serum of an immunised animal frequently failed to exercise any definite bactericidal action by itself, if white blood cells from either a normal or an immunised animal were added to the mixture of cocci and immune serum the serum so acted upon the cocci as to render them sensitive to the action of the leucocytes, and many of the pneumococci in the mixture were englobed and destroyed by the white cells. This property he stated was peculiar to immune serum.

Then came the epoch-marking and now widely accepted researches of Wright and Douglas, which followed on Leishman's work on phagocytosis, in the course of which the presence of certain bodies designated "opsonins" was demonstrated in human serum—substances which enabled the serum containing them to behave in a manner similar to that described by Mennes in connexion with his pneumococcus immune serum. These observers next devised a very ingenious method for measuring the amount of opsonin in a given serum, by means of which they were able to show that as compared with normal serum, the serum obtained from a recently infected individual or animal contained a diminished amount of an opsonin special and specific for the infecting bacterium. The serum of an immune animal on contrary contained as much as or more of that specific opsonin than the serum of the normal. Finally, by injecting small doses of "killed" cultivations of the bacterium into the subcutaneous tissues of the patient they were able so to stimulate the immunising machinery in the direction of the over-production of specific opsonin as beneficially to influence the course of the infection. Such in bald outline are the experimental data around which Wright and his pupils have built up a complete and extensive system of pathology, diagnosis, and vaccine-therapy. It now remains to indicate its application to pneumococcic infections in particular.

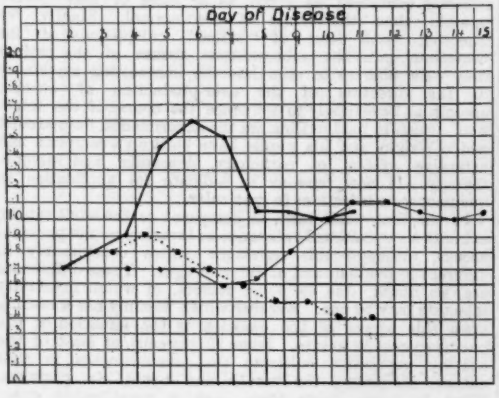
In the first place man, as compared to the adult rabbit, exhibits a very marked resistance to invasion by the pneumococcus, although this resistance varies considerably in different individuals and at different ages. These differences are, no doubt, due to many factors, of which hereditary selection may be one. Another which possibly has a bearing upon this aspect of the question is the situation of the pneumococcus in nature. Some 10 per cent. at least of the healthy population cultivate the pneumococcus in that natural incubator, the mouth and upper air passages. What is more likely than that a considerable quantity of antibodies is formed and some degree of immunity set up as a result of the continual absorption of small doses of the toxins and other metabolic products of the pneumococcus. It is not surprising to find that the opsonin content of normal human serum is on an average double that of the normal rabbit, although it must be borne in mind that opsonins probably form but one of many antibacterial substances elaborated by the body in its unceasing resistance to the attacks of external forces. Assuming the opsonin present in the normal human serum to be represented by unity, the opsonin in the normal rabbit serum only reaches half that figure. The figure expressing that ratio—viz., 0·5—is spoken of as the opsonin index. By the exercise of infinite care, however, in the process of immunisation the pneumococcus opsonin content of the rabbit's serum may be raised until it is equal to, and even greatly superior to, that of normal human serum. Under these conditions the injection of the pneumococcus of sufficient virulence and sufficient dose to cause the death of a control rabbit within 36 hours from acute septicæmia will only give rise to localised suppuration.

TABLE VII.—*Minimal Lethal Dose 0·000001 loop. (Pneumococcus Strain "Sudbury.")*

Rabbit.	Sex.	Weight.	Opsonin index.	Dose.	Result.
Control *a*	M.	1250	0·58	0·0000001	Unaffected.
" *b*	M.	1260	0·62	0·000001	Death in 48 hours.
" *c*	M.	1250	0·50	0·00001	Death in 36 hours.
Immune	M.	1240	1·13	0·00001	Local abscess.

Macdonald, who very carefully studied the clinical aspects of pneumonia with reference to the formation of pneumococcic opsonin throughout the course of the disease, published his results in 1906 and showed that the movements of the curve representing the opsonin index afforded an exact record of the measure of resistance opposed by the patient to the inroads of the organism. My own observations fully confirm Macdonald's, and, moreover, show that the resistance of the individual so far as can be measured by his opsonin response to any given pneumococcus infection conforms to one of three main classes which are represented by the three accompanying curves. Two of these opsonin curves are compiled from estimations carried out in connexion with that clinical form of lobar pneumonia in which crisis takes place and that which recovers by lysis in order to contrast them with the curve obtained in the acute septicæmia which terminates in death; and although we are not immediately concerned with pneumococcus infection of the lung tissue I make no excuse for presenting them here, as being derived from acute cases they illustrate my point much more concisely than would be the case if they had been derived from chronic suppurations.

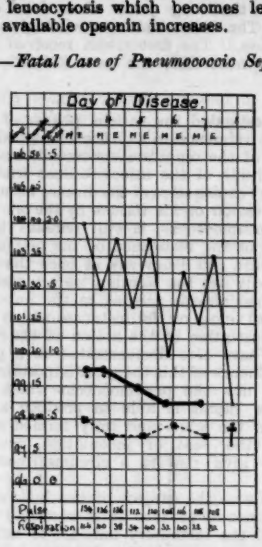
CHART 1.—*The Opsonin Index in Pneumococcic Infections; Three Leading Types.*



In the third, represented by the lowermost (continuous) curve, the process by which opsonins are elaborated is completely paralysed, as the result possibly of an extremely heavy dose of infective material, or of infection by an extremely virulent pneumococcus, or of infection directly into the blood stream, or more probably of a combination of all of these factors. In the second (dotted line), the production of pneumococcus opsonin is temporarily suspended, perhaps owing to the existence of, say, any two of the factors just enumerated, but after a time recovery of tone takes place, production goes on in excess of expenditure, and finally sufficient opsonin is produced and thrown out into the circulation to subdue the invader. Incidentally it may be mentioned that this type of case is most frequently the one in which the pneumonia is associated with suppurative lesion. In the first (thick continuous line) the immunising machinery promptly responds to the call made upon it, at once elaborates opsonin in excess, with the result that the pneumococcus is rapidly destroyed and recovery takes place. [Occasionally, be it noted, this type of curve after returning to the normal suffers a further fall, and some few pneumococci remaining in some far distant spot, in an almost moribund condition, take on a fresh lease of life and some small localised suppuration results. In such circumstances the opsonin curve would be expressed by tacking the beginning of the second curve in the chart on to the end of the first.] In other words, in the third instance the immunising machinery is badly overstrained, in the second understrained, and in the first severely but not unduly strained.

As suggesting a possible source of the pneumococcus opsonin I have inserted in the two following charts (Charts 2 and 3) the leucocyte curve as well as the opsonin curve. In the fatal case leucocytosis is absent, the opsonin index falls gradually and continuously. In the second case the fall in the opsonin index that is practically always noted in the early stages of an acute infection is associated with a considerable leucocytosis which becomes less marked as the amount of available opsonin increases.

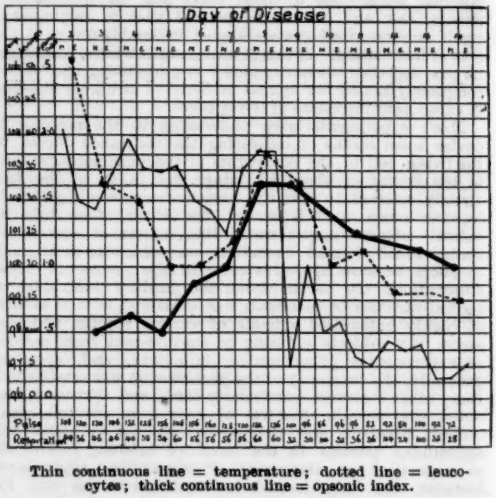
CHART 2.—*Fatal Case of Pneumococcic Septicæmia.*



Upper thin line = temperature; middle thick line = opsonic index; lower dotted line = leucocytes per cubic millimetre of blood.

I cannot conclude without a few remarks upon what may be termed the bacteriological therapy of pneumococcic infections. Many of the earliest students of the life-history of the pneumococcus—the Klemperer brothers, Foà and Carbone, and in this country Washbourn—showed that the

CHART 3.—*Case of Pneumonia terminating by Crisis.*



Thin continuous line = temperature; dotted line = leucocytes; thick continuous line = opsonic index.

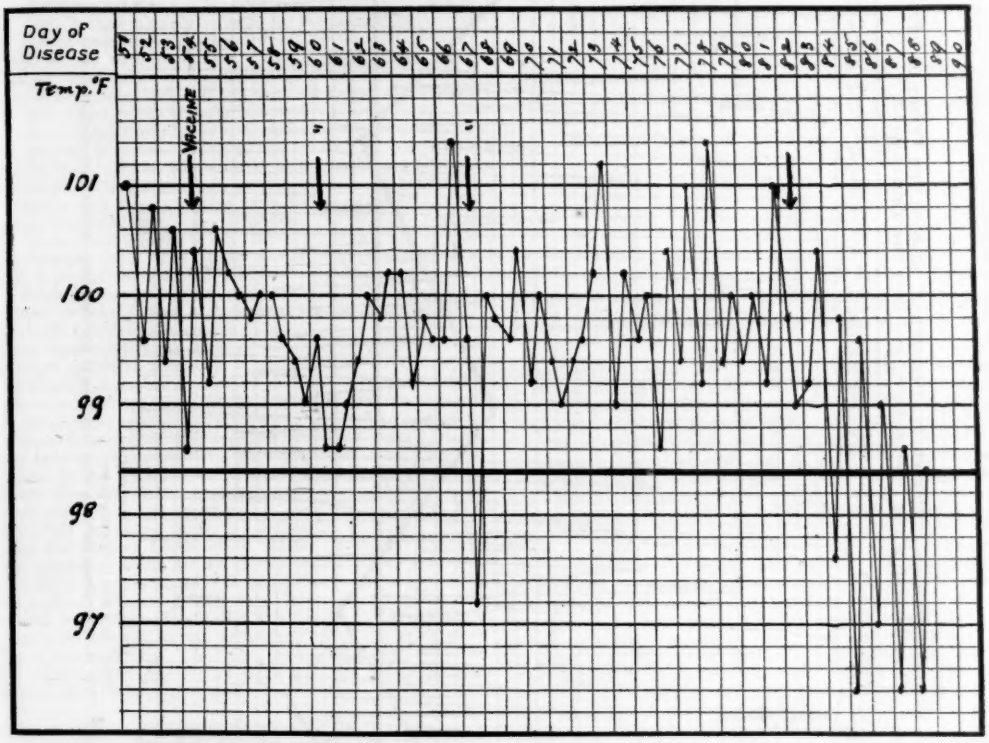
blood serum of immunised animals protected other animals from the effects of pneumococcus inoculations if injected simultaneously or even subsequently. Washbourn early in 1897 immunised the horse and about the same time Pane immunised the donkey and the goat with a view to obtaining a potent serum for the treatment of cases in man. Such serum has never been really extensively tested in this country and therefore no very definite opinion can be expressed as to its value. What little evidence there is available is certainly in its favour; for instance, in a small series of six cases of pneumonia collected by Washbourn the serum in three cases exerted a powerful and beneficial effect

upon temperature and upon the pulse and respiration rates; in one case it appeared to have no effect whatever, and in the last case it was powerless to avert the fatal issue. Pane, in reporting 29 cases with two deaths and a further series of nine severe cases of epidemic pneumonia (in Naples) with one death, insists on the rapid improvement that follows the injection of serum.

Antipneumococcic serum has, however, nowhere achieved the striking results in acute infections that are associated with the serum treatment of diphtheria, and it has never obtained the confidence of the profession, while in chronic and suppurative pneumococcus infections the serum is quite useless. There are many reasons for its failure. In the first place, the pneumococcus elaborates but very feeble toxins *in vitro*, and the serum which is obtained from immunised animals is antibacterial only and not antitoxic, hence it would appear probable that its administration would only be effective during the very early stages of infection or in cases of pneumococcic septicæmia. But the symptoms develop in man and the diagnosis is made only when the pneumococcus has obtained a firm foothold; consequently to be of value a very powerful bactericidal serum is needed and experimentally at least the capacity to protect against some 300 minimal lethal doses per cubic centimetre of serum is the most powerful yet available. Many of the symptoms observed in pneumococcic infections are, moreover, those of profound toxæmia and a purely bactericidal serum would appear to possess very little therapeutic value in such circumstances; on the other hand, Pane states that though his serum is bactericidal it does not act directly upon the pneumococcus itself but produces its beneficial effects by establishing a true active immunity. Then, again, Washbourn and I elicited the fact that varieties exist among strains of pneumococci which can only be appreciated by the failure of the serum to protect animals infected with them, for in testing Pane's serum we found that it protected against four out of five of our strains but was absolutely powerless against the fifth. Finally, the various brands of serum vary considerably, even in their bactericidal power, probably owing to the fact that the bleeding of the immune animal is usually carried out at a date determined by purely clinical observation, and it is just possible that if the animal's blood was examined daily and the amount of some antibody—say, pneumococcus opsonin—estimated and the bleeding performed when that body was present in maximum quantity, vastly superior clinical results might follow the administration of such serum.

Turning now to the employment of killed cultivations or vaccines in the treatment of pneumococcus infections a much greater measure of success is obtained. The behaviour of acute infections such as septicæmia and lobar pneumonia under the influence of pneumococcus vaccine has not yet come under my own personal observation, but excellent results in this direction are reported by American observers. I am, however, firmly convinced of the value of vaccines in the chronic suppurative lesions due to the pneumococcus.

CHART 4.—CASE OF PNEUMOCOCCIC SEPTICÆMIA WITH VARIOUS METASTASES SHOWING THE EFFECT OF INJECTIONS OF PNEUMOCOCCUS VACCINE UPON THE PYREXIA.



The arrows indicate the days when injections of pneumococcus vaccine were administered.

In our early studies of experimental infections with the pneumococcus Washbourn and I had observed the fact that when immunising rabbits by the method I have already described the healing of the subcutaneous abscess which followed the inoculation of the first dose of living pneumococci could be accelerated by a subcutaneous or an intraperitoneal injection of killed broth cultivation; indeed, in some instances, if the injection was made before definite fluctuation could be detected in the local lesion, the process of tissue necrosis was arrested and resolution took place. These happy results were not always attained, the reason, of course, being that we had no reliable guide as to when and how much to inject. I have already stated that a correct appreciation of the movements of the opsonin index forms the basis of, and renders possible, the treatment of bacterial infections by means of killed cultivations of the responsible organisms, or, more shortly, "vaccines," and

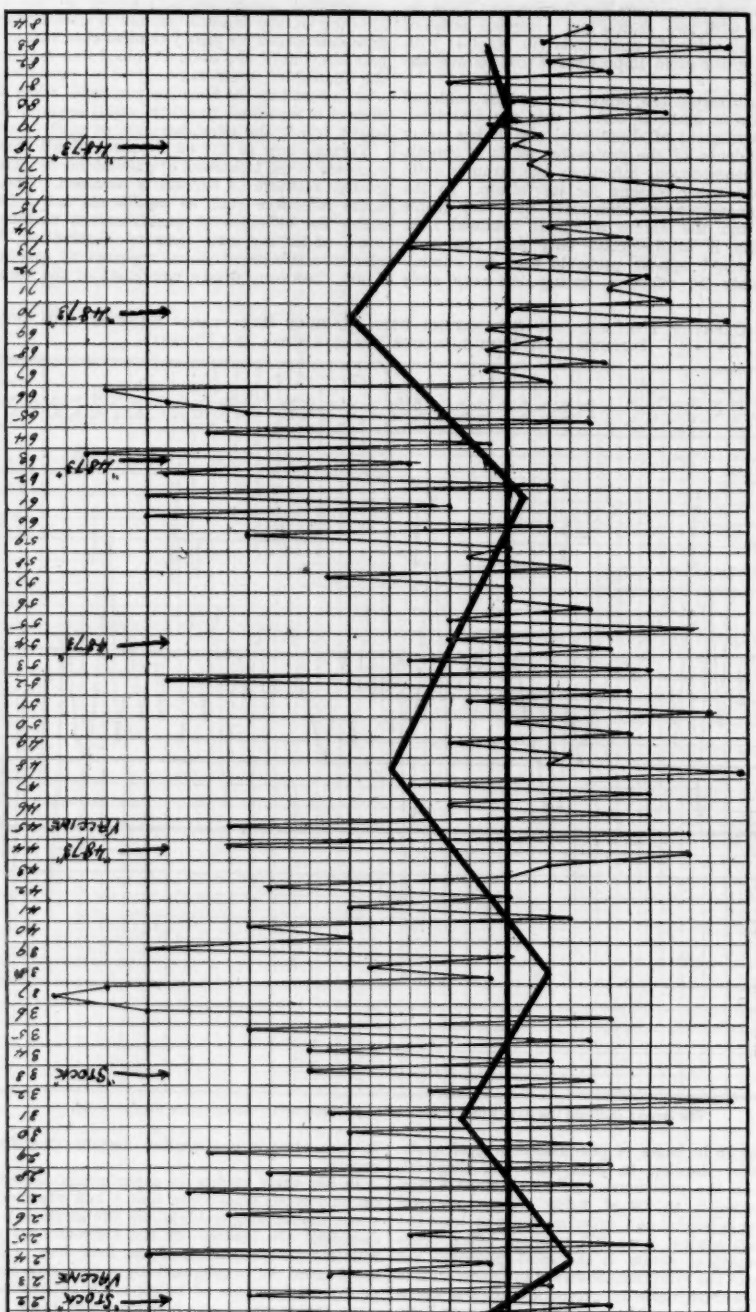


CHART 5.—CASE OF SECONDARY PNEUMOCOCCIC INFECTION OF A TUBERCULOUS PERITONEUM, SHOWING THE EFFECT OF "STOCK" AND "SPECIAL" PNEUMOCOCCUS VACCINES UPON THE OPSONIN INDEX AND UPON THE TEMPERATURE.

Thin continuous line = temperature.
Thick black line = opsonin index.
The arrows indicate the days when injections of pneumococcus vaccine were administered.

this holds good in the case of infections by the pneumococcus, and particularly those which are localised and are associated with pus formation. Cases such as these have yielded most promising results and I could cite numerous instances. I have, however, selected two which will suffice to show the possibilities of this adjunct to ordinary operative procedures.

The first (Chart 4) was a small girl in whom double lobar pneumonia was followed by empyemata, that on one side being opened on the twentieth day of the disease and on the other two days later. A subcutaneous (pneumococcic) abscess of the arm was also opened on the twenty-second day. The right hip, the seat of suppurative arthritis, was operated upon on the thirtieth day and an iliac abscess also was drained. On the fifty-fourth day an abscess in the gluteal muscles, behind the trochanter, was incised. A vaccine was prepared from a pneumococcus isolated from the empyema pus and treatment was commenced on the fifty-second day. The effect of the injections upon the temperature is well seen, and the case, which had been regarded as hopeless, was discharged to a convalescent home on the eighty-second day. The next case (Chart 5) suggests the point I have already referred to concerning particular varieties of pneumococci against which certain antipneumococcic serums were powerless. The boy was under treatment for tuberculous peritonitis complicated by a secondary pneumococcic infection, and pus crowded with pneumococci was discharged freely through the ruptured umbilicus. On the twenty-second day after the patient's admission to hospital and again on the thirty-third a "stock" pneumococcus vaccine was injected but without obvious effect so far as concerned either temperature or general clinical condition. A vaccine was then prepared from the particular pneumococcus isolated from the peritoneal pus of this patient and improvement followed the injection of a dose on the forty-fourth day. The improvement was continued, the patient put on weight, the pus gradually disappeared, and the temperature came down. Tuberculin treatment was then adopted and the patient after a short stay in a convalescent home will become an out-patient.

One other application of pneumococcus vaccines to cases in which operative treatment is needed—and these remarks hold equally in the case of other bacterial infections—and I have done. Where the opsonin content of the blood is low the preliminary injection of a suitable vaccine by stimulating the manufacture of further supplies places the patient in the most favourable condition to withstand shock and resist the further spread of infection through the disturbance of the tissues involved by the necessary operative procedures. In illustration I might mention a case of empyema and peritonitis following lobar pneumonia in an adult female under the care of Dr. W. Hale White. From the pus, the fluid portion of which had an opsonic index of less than 0·2, a virulent pneumococcus was isolated, a vaccine prepared, and a dose injected. Two days later the empyema was opened, when it was found that the pleural cavity communicated with the abdominal cavity and some five or six pints of pus were removed. The index of the liquor puris was now 0·9. The patient convalesced rapidly—a few more injections of vaccine were required—and was discharged cured.

CONSIDERATIONS CONCERNING THE FUNCTIONS OF THE STOMACH AND THE OPERATION OF GASTRO-ENTEROSTOMY.

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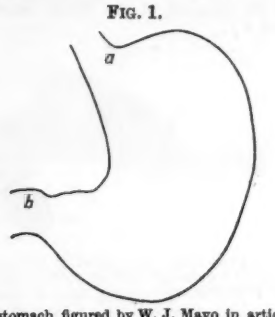
SURGEON AND LECTURER ON CLINICAL SURGERY, ABERDEEN ROYAL INFIRMARY.

ON account of the usually immediate and striking benefit obtained, the operation of gastro-enterostomy has established itself as a very valuable and necessary procedure in many diseases involving the stomach and duodenum. Nevertheless, in spite of careful selection of cases, disappointing results, such as regurgitant biliary vomiting or formation of jejunal ulcer perhaps with perforation, occur occasionally, even when the most modern method (posterior no-loop) has been followed. Why such sequelæ should occur only occasionally, when apparently the same technique has been carried out as in perfectly successful cases, is not clear. A possible explanation may be that sufficient care is not taken in the selection of the site of the opening in the stomach. Mayo's guide (that the opening should lie in a vertical line from the cardiac orifice) is probably a thoroughly sound one when the stomach is lying undisturbed in the abdominal cavity. When the stomach is pulled out, however, or otherwise manipulated the proper place may not be chosen, as the organ tends to swing round its lesser curvature. This, as I shall endeavour to show, *may* be the reason of untoward results.

The best operative procedure is that which most nearly preserves or restores the natural functions of any part requiring such interference. For this, of course, accurate knowledge of the natural functions of the part concerned is necessary. I venture to assert that this essential is not fulfilled in the case of the stomach, at least in so far as its motor functions are concerned.

It would seem that gastric surgery, as developed from experience gained in earlier operations on greatly dilated stomachs, has persisted in regarding the stomach as a "one compartment" organ. (Fig. 1.) Operations were

FIG. 1.



Tracing of stomach figured by W. J. Mayo in article on the Technique of Gastro-enterostomy in the Annals of Surgery, April, 1906 (reduced to one-third). *a*, Cardiac orifice; *b*, pyloric orifice.

planned with the object of "draining" these huge stomachs. To suit latter-day ideas some other term than "drainage" must be found. It does not convey a proper idea of the modern operation, which is executed more on the principle of a "short circuit" or, in some cases, of a "safety valve." Cannon and Blake [1] showed that gastro-enterostomy need not be a drainage operation; that, in fact, food preferred to pass through the pylorus rather than through the newly formed "stoma," unless the latter was made very large. Their observations have probably been too much emphasised in this connexion. They were made on normal healthy cats. Leggett and Maury's [2] more recent experiments prove little. Most of their operations, recorded in detail, seem to have resulted, more or less, in the old "vicious circle."

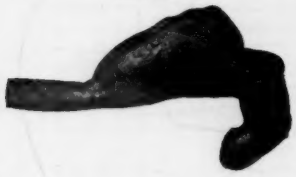
To procure its beneficial results gastro-enterostomy *must* be at first a drainage operation; later, when the gastric secretions and the condition of the pyloric sphincter and of the neighbouring mucous membranes have become more normal, this function of drainage is not required and food *may* again pass naturally through the pylorus. Where permanent pyloric or duodenal stenosis is present, then, of course, "drainage" is permanent. Cannon and Blake [3] have shown that towards the end of digestion the pyloric end of the stomach is the lowest part, owing to the contraction of the longitudinal fibres of the stomach, and therefore that the "stoma" in gastro-enterostomy should be made as near the pylorus as possible. This seems rather at variance with their finding, that the operation is not a drainage one, and I shall endeavour to show that there are probably more potent reasons why the "stoma" should be made as near the pylorus as possible. The great reason is that by making the stoma in this situation gastric digestion is allowed to become more quickly and permanently normal again.

Professor D. J. Cunningham, [4] the late Professor Birmingham, [5] and others have shown very conclusively in anatomical specimens that the shape of the stomach is very different from that described until a few years ago. It is evident

[1] Annals of Surgery, May, 1905.
[2] Ibid., October, 1907.
[3] Loc. cit.
[4] Transactions of the Royal Society of Edinburgh, vol. xlv., Part I., No. 2.
[5] Cunningham's Text-book of Anatomy, second edition, p. 1052.

that it can no longer be regarded as a "one compartment" organ. (I am very greatly indebted to Professor Cunningham for permission to publish several of his illustrations. I should like to say that practically the whole of this paper had been written before I knew of Professor Cunningham's excellent work, and I was gratified to find that his anatomical observations supported so strongly the deductions I had made from personal clinical observations.) Tracings of x ray shadows of the stomach of "normal" individuals who have taken meals mixed with bismuth subnitrate, made by Cannon and Blake [6] and lately by Pfahler,[7] show the differentiation indicated so well by Professor Cunningham, although these authors do not point this out. The "normal" stomach when at rest—i.e., empty—appears, to judge from these anatomical studies, to be tubular in nearly its whole extent, the exception being the proximal, larger part of the cardiac end, which never loses a more or less saccular form. Judging from what one sees on "screening" a stomach which is disposing of a bismuth meal this *normal* form becomes even more marked than in the resting state. This *normal* form of the stomach is seen in its most perfect condition in the stomach of the fœtus before term. (See Figs. 2, 3, and 4.)

FIG. 2.

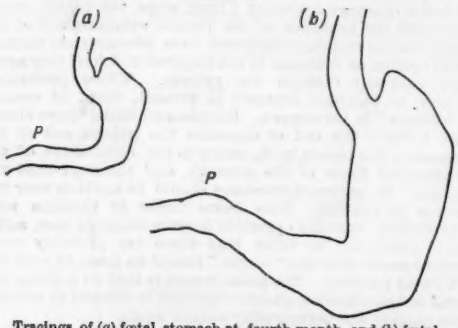


"Stomach of a full-time fœtus, showing the physiological subdivision into a cardiac saccular portion and a tubular portion." (Cunningham.)

FIG. 3.

"Stomach of a full-time fœtus in which the physiological division into two parts is seen." (Cunningham.)

FIG. 4.



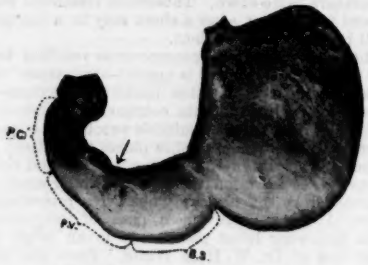
Tracings of (*a*) fœtal stomach at fourth month, and (*b*) fœtal stomach at full term. Cardiac portion distended with amniotic fluid, &c.; P, pylorus. From specimens in the Anatomical Department of Aberdeen University.

Having been impressed (from clinical observations) with the idea that the adult human stomach in its natural state should more or less conform to this type, I naturally looked for confirmation in the formalin-hardened stomachs investigated by Professor Cunningham, and, to my mind, it is not wanting. One must remember, in looking at his illustrations, that the hardening fluid was probably never injected earlier than 24 hours after death. By this time gas formation occurs. This causes irregular relaxation of the gastric walls. In one case one part dilates while another remains contracted; in another case the reverse occurs, and so on. The onset of death and the loss of contractility of unstriped muscle, as in the case of arteries, varies with the condition of the individual's nutrition at death. This rule, no doubt, applies also to the unstriped muscle of the alimentary canal and must be taken into account when such observations are made. Thus an average must be struck in order to arrive at an approximately

FIG. 5.

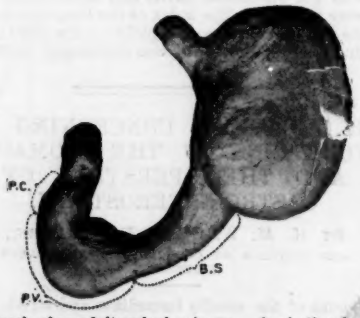
"Stomach of a young male viewed from the front and slightly from above." "From its form we may conclude that at the time of death the digestive process was in a state of abeyance, or was just at the point of beginning." (Cunningham.) May not the form be more likely due to excessive ante- or post-mortem dilatation?

FIG. 6.



"Stomach of an adult female in the early stage of the emptying process." (Cunningham.)

FIG. 7.



"Stomach of an adult male showing very clearly the physiological sub-division into a cardiac sac and a gastric tube." "B.S., Part of gastric tube formed by the body of the stomach." (Cunningham.)

[6] Ibid.

[7] Journal of the American Medical Association, Dec. 21st, 1907.

accurate knowledge of the condition of affairs. One expects, of course, that where circular muscular fibres preponderate, there constriction will more frequently be present. By making a composite picture therefore of the illustrations presented by Professor Cunningham one finds that the fœtal form asserts itself. (Figs. 5 to 11.) Observations on the stomach form (such as those made by Wernstedt [8]) when

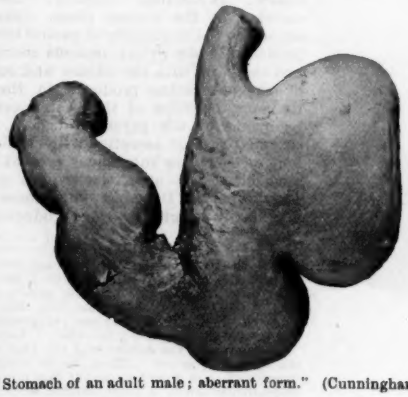
FIG. 8

"Stomach of a young adult male viewed from above, in which the emptying process is nearly completed." (Cunningham.)

FIG. 9.

"Stomach of an adult female; aberrant form." (Cunningham.) May not this be merely modified by post-mortem dilatation?

FIG. 10.

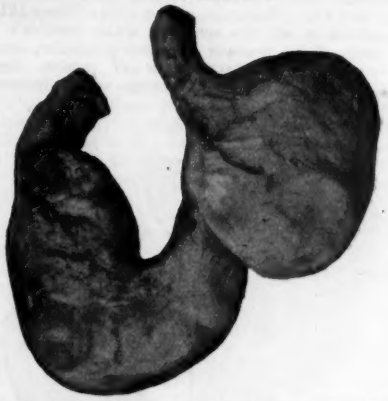


"Stomach of an adult male; aberrant form." (Cunningham.)

even artificial distension (*künstliche Dilatierung*) was often made previously to the hardening process are obviously of no value in settling this question.

[8] Archiv für Anatomie und Physiologie (Anatomische Abtheilung), 1907.

FIG. 11.



"Specimen obtained from the post-mortem room. It exhibits a form intermediate between that seen in Fig. 7 and that of a true hour-glass stomach." (Cunningham.) Might not post-mortem dilatation explain the difference in appearance?

The stomach is divided by the so-called "incisura angularis" (His), on the lesser curvature, into a more or less vertical cardiac part, to the left, and a horizontal pyloric part to the right. As stated, the proximal part of the cardiac portion is always sac-like. The distal part is well supplied with circular fibres. Into the far end of this numerous bands of oblique fibres run from the cardiac orifice (Fig. 14), reaching to the greater curvature opposite the incisura angularis. These are quite well marked and have no doubt a definite function to perform. This tubular (?) cardiac part deserves greater attention than it has hitherto received, as it is probably in it that most important preliminary "churning" of the food takes place. (Figs. 12 and 13.) The food is thus thoroughly mixed with the cardiac juices before being passed into the pyloric part. The "incisura angularis" corresponds in many specimens with a well-marked set of circular fibres (Figs. 12 and 13) previously known, by physiologists especially, as the "sphincter of the antrum" or the "transverse band." According to Starling [9] this is a physiological and not an anatomical sphincter. I suggest that "*sphincter aditus vestibuli*" is a more suitable name. The pyloric portion of the stomach is subdivided by a slightly marked sulcus on

FIG. 12.

"Section through the stomach of an adult male (aberrant form) along the plane of the curvatures." (Cunningham.)

the greater curvature into a larger part, the *pyloric vestibule*, and a smaller, very muscular part, the *pyloric canal*.

The proximal sac-like part of the cardiac portion is endowed apparently only with tonic contraction. The more

[9] Recent Advances in the Physiology of Digestion, by E. H. Starling, 1906, p. 134.

tubular distal part is capable of peristaltic action as well (Figs. 12 and 13). The action of the oblique fibres (Fig. 14) would materially aid the sphincter aditus vestibuli. The pyloric part of the stomach is normally tubular, tonically contracted, and at certain stages of gastric digestion affected by strong peristaltic waves which increase in

FIG. 13.

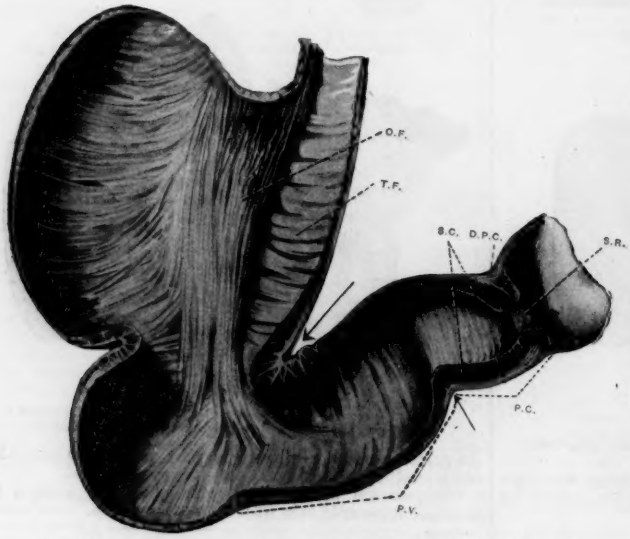
"The anterior half of the stomach depicted in Fig. 11." (Cunningham).

strength as the pylorus is approached, corresponding to the increasing amount of circular muscular tissue present. All this is easily confirmed by the use of x ray screening after a "bismuth" meal. The meal (containing from 1½ to 2 ounces of bismuth subcarb.) should be taken in two or three "courses" at intervals of from 15 to 30 minutes.

The pyloric portion, as I shall point out again later, thus resembles a much-hypertrophied piece of intestine, the hypertrophy becoming more marked as the pylorus is neared. There is no good reason for thinking that reversed peristalsis should occur here any more than in the small intestine. If the pylorus is closed an axial reflux stream takes place (not necessarily back into the cardiac end).[10] Yet the common idea seems to be that food is tossed or churned backwards and forwards in the stomach as a whole. It may quite reasonably be supposed that when food enters the easily dilated cardiac portion it becomes mixed with "juices" secreted there and is passed on from one compartment to another as soon as it is suitably prepared. If too much food is introduced some of it is ejected (vomited)—e.g., in the presumably normal stomach of the infant. If unsuitable food is taken abnormal secretion occurs—e.g., too much acid. This *may* be neutralised in the pyloric portion; if not, the pylorus is irritated and remains contracted, regurgitation into the cardiac end occurs, and a "vicious circle" is established and maintained till the stomach is emptied by vomiting and a fresh start can be made. This very readily occurs in the infant. In these modern days, as the individual grows older, the stomach becomes increasingly abused, the "natural" state of things is changed, and a larger and larger part of the cardiac end goes to form the passive reservoir. When the cycle of events has led to actual disease (ulceration, pyloric spasm, stenosis, &c.) more and more of the stomach is involved till it assumes the condition of a large flaccid bag which has little power of emptying itself. There are nowadays very few normal stomachs to be found. In fact, it is probable that the "normal" condition in the adult is, as I have indicated, a rather feebly acting cardiac bag and a more forcibly acting, but still too frequently relaxed, pyloric tube. Such an organ is very easily upset in its digestive powers.

The juices secreted by the different parts of the alimentary tract interact upon one another, stimulating or inhibiting. For example, as Wertheimer and others have shown, acid in the duodenum excites the production of secretin, which in turn stimulates the secretion of pancreatic juice. This observation applies apparently to the greater part of the small intestine, although the response is more feeble in the lower parts. On the other hand, according to some authorities, secretin or some other substance in the small intestine exerts an inhibitory effect on the secretion of the gastric (acid) juice. If, then, owing to hyperacidity, pyloric spasm occurs the gastric juice cannot gain access at the proper time to the small intestine and the cycle of events referred to is broken. The effect of gastro-enterostomy, by draining the pyloric portion through the short circuit, is to act as a safety valve. A more probable explanation, in the light of the opinion of the greater number of physiologists, is the following. In a case, for example, of hyperacidity causing pyloric spasm mere drainage of the pyloric portion removes foodstuffs which serve as a chemical stimulus in the production of acid and also provides for easy escape of the excess of acid tending to be present. Therefore the hyperacidity will be reduced and consequently the pyloric spasm. As Starling[11] remarks: "The juice secreted in the second phase must vary according to the quantity of gastric hormone produced in the pyloric mucous membrane, and therefore with the nature and amount of the substances produced in the preliminary digestion of the gastric contents by means of the psychic juice. ..... The second phase of secretion will continue so long as there are substances present in the stomach to act upon the pyloric mucous membrane." Draining off these will necessarily diminish the production of juice.

FIG. 14.



"This figure shows the muscular fibres of the anterior half of the stomach represented in Fig. 10. The mucous membrane and submucous coat have been removed from the interior." (Cunningham.)

[10] Since this paper was submitted for the acceptance of the Editor of THE LANCET I have read with great interest the valuable article in the *British Medical Journal* of Jan. 18th, 1908, p. 134, by Dr. A. F. Hertz. I quote one paragraph which has a very direct bearing on what I have said: 'No mixing of the contents of the two parts of the stomach occurs. Thus, on a number of occasions I have observed that if food mixed with bismuth carbonate is eaten shortly after a meal containing none of the salt, a rounded shadow just under the left half of the diaphragm is seen, whilst the pyloric part of the stomach remains invisible. After some time the first part of the meal passes into the duodenum, and the food containing the bismuth gradually replaces it in the pyloric part of the stomach, which therefore becomes visible."

[11] Loc. cit., pp. 78, 79.

I feel that this view of the anatomical arrangement of the adult stomach is the right one owing to the fact that I have so frequently observed this condition of affairs during operations on or near the stomach. As I have stated already, one finds that, unless the stomach is much dilated as a whole, the pyloric part when exposed, and especially if handled, looks like a piece of much hypertrophied intestine. This part presents in a median epigastric incision. The cardiac part is usually flaccid. In cases where gastro-enterostomy has been indicated I have found it enlarged as well as flaccid. Indeed, the presence of this *flaccid enlargement may be an indication that gastro-enterostomy will do good, even although no pyloric stenosis exists.* This cardiac portion does not appear in the wound, but when pulled out makes a striking contrast to the contracted pyloric part and offers great temptation to those who believe in the "drainage" qualifications of gastro-enterostomy, to make the stoma at the most dependent part of the flaccid bag. Moynihan [12] refers to repeated observations of localised spasmodic constrictions "in the body of the stomach and at the pylorus, but never at the fundus." These I have also observed. They are, of course, quite different from the general contraction of the pyloric portion which I have just described. In fact, they may occur along with this, especially if the stomach be mechanically irritated.

FIG. 15.

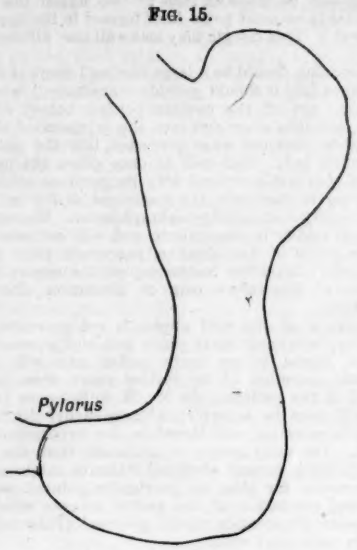


FIG. 16.

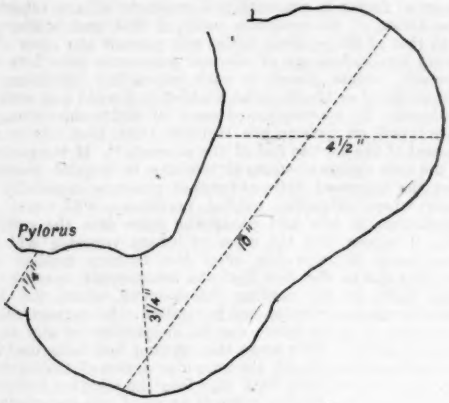
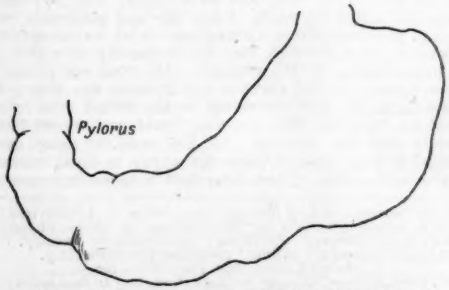


FIG. 17.



Outlines of three stomachs, removed post mortem, collapsed and flat on a plate. In spite of considerable distension having been present, they manifest a distinct tendency to form a cardiac sac and pyloric tube. There was no evidence of disease in stomach or duodenum of either case. Observed, without selection, by Dr. G. M. Duncan, Pathological Department, Aberdeen University.

It seems to me that our ideas as to what constitutes pathological dilatation of the stomach must be revised. Without doubt such dilatation occurs first in the cardiac end and may be the cause of such persistent symptoms as only operation will satisfactorily get rid of. Our present diagnostic methods of inflating the stomach are ordinarily probably too vigorous and too much attention is given to the relation of the stomach (the pyloric portion, which may still be approximately normal) to the umbilicus. Unless gastric resonance, as ascertained in the neighbourhood of the mid-line of the abdomen, reaches nearly to, or beyond, the umbilicus, there is thought to be no dilatation of the stomach. From practical experience I feel sure that more attention should be given to the condition of the outline of the cardiac portion. Careful external examination will often reveal an unexpected amount of dilatation there. The more natural the stomach the more decidedly is it in the form of "cardiac sac and pyloric tube." This may prove of much value in diagnosis.

In order to explain satisfactorily the symptoms of gastric ulcer and the beneficial effects of gastro-enterostomy the cycle of events in the stomach at work must be somewhat as follows. The cardiac portion acts as a reservoir, in which food is, in a great measure, prepared for further digestion by being subjected to the action of the juices secreted in that part. The food is intimately mixed with those juices by the churning action of the gastric muscular coats, especially of the distal part of the cardiac portion, and by the movements of the diaphragm and abdominal muscles during respiration and conversation, and still more so during forced respiratory movements, such as laughing, sneezing, and the like. (This can be confirmed by screening after a bismuth meal.) Hence we have possibly a partial scientific explanation of the adage, "laugh and grow fat," and of the custom still extant in some quarters of passing round the snuff-mull at the end of a meal. These movements, moreover, assist the circulation of the blood in the abdominal cavity and thereby are beneficial to digestion. The food, having acquired its proper chemical reaction, is now (after from 15 minutes to half an hour, according to the nature of the food), by the drawing up of the greater curvature (Cannon), propelled into the pyloric portion which, by its marked peristaltic efforts, thrusts the food towards and through the pyloric sphincter. Skiagraphic tracings of the human "normal" stomach (e.g., Pfahler's) show that the part well to the left of the mid-line is filled with food first (i e., the saccular and tubular parts of the cardiac portion—the vertical portion of the stomach). This can easily be confirmed. Even when a considerable quantity of food has been swallowed, causing a fair amount of distension, the vertical cardiac portion is still alone affected. It would seem probable that until the time when the drawing up of the greater curvature takes place there is no food or acid secretion in the pyloric part, ingress of such being prevented by its tonic contraction and higher elevation and the closure of the "sphincter aditus vestibuli" (tucked up by the action of the oblique fibres). A well-marked notch can frequently be seen (with the fluorescent screen) on the greater curvature, corresponding to the position of this sphincter, after part of the "bismuth" meal has passed into the pyloric portion.

The pyloric portion resembles the duodenum in its pathology. The reaction of its secretion is alkaline. Its

[12] Brit. Med. Jour., Feb. 20th, 1904, p. 414.

secretion is profuse and renders the chyme more fluid. Hyperacidity of the gastric contents causes irritation or ulceration, especially if they are retained long in this portion by spasm of the pylorus. The pyloric secretion may be insufficient to neutralise this hyperacidity and make the chyme of a proper reaction to stimulate relaxation of the pylorus. Exacerbation of the pain in gastric ulcer is due to irritation thereof by food, acid, or more or less by increased movement. In support of the foregoing statement (at the end of the last paragraph) I point out that the pain of ulcer of the pyloric region does not assert itself until a considerable interval after food is taken into the stomach, i.e., until some part of it, first rendered acid, has gained access to the pyloric part. If the pain is due to increased movement of the pyloric part, then this portion must be at rest during the earlier stage of gastric digestion (tonically contracted).

It seems that the mechanical functions of the stomach, as hitherto understood, have been deduced (1) from imperfect anatomical knowledge; (2) from direct observation (Rossbach) perforce made under abnormal conditions; (3) from chemical tests made with substances which are absorbed only when they reach the duodenum; (4) from the persistence in the stomach after varying periods of indigestible particles or ordinary food-stuffs introduced; and (5), possibly most important, from x ray screening of the stomach after a meal mixed with bismuth. Of these, only (2) and (5) may throw light on the action of the pyloric portion; (3) and (4) have reference to the action of the stomach as a "one compartment" organ. With regard to Rossbach's observations, as already stated, one often sees contraction of the pyloric portion in a fasting stomach exposed during operation. The churning action, observed at an early stage and attributed by some x-ray observers to the pyloric portion, is apparently confined to the part of the cardiac portion adjacent to the "sphincter aditus vestibuli," which is possessed of peristaltic action.

Physiologists state that the "two portions of the stomach seem to be partially or, in certain animals from time to time, completely cut off from each other by the contraction of the sphincter of the antrum" (Stewart). The part distal to this "sphincter" is in the living stomach tubular (Starling). An obvious difference in colour of the parts of the stomach is apparent in such an animal as the rat. This is sharply demarcated.

Developmentally, the greater part of the cardiac end of the adult stomach is a mere diverticulum, blown out, as it were, from one side of the gastric tube, although it is the most important part of the tube from the standpoint of the gastric digestion.

The predisposition of the pyloric portion to ulceration as compared with the cardiac end has already been referred to. The constriction in cicatricial hour-glass stomach usually occupies the site of the "sphincter aditus vestibuli." The part of the cardiac portion adjacent to the lesser curvature (the remnant of the gastric tube from which the cardiac diverticulum is developed) is to be differentiated from the rest of the cardiac portion. It resembles the pyloric portion and is the usual site of ulceration when this involves the cardiac end.

Thus developmentally, anatomically, physiologically, and pathologically, there are great differences between the pyloric and cardiac ends of the stomach.

Taking these differences into consideration, it seems extraordinary that the stomach should be looked upon, for working purposes, as a "one compartment" organ. Indeed, it seems absurd to suppose that food was meant to be tossed about inside an organ which pours out acid secretion at one end and alkaline secretion at the other end. It would be folly to think that the one type of secretion does not inhibit the action of the other by mere neutralisation alone. That a gourmand escapes extreme digestive disturbance even although he daily distends his stomach so that cardiac and pyloric portions form one cavity, proves merely the extraordinary accommodative power of the human alimentary tract—it does not disprove the theory I put forward. It is apparent even to the most unobservant layman that he is the healthiest when he eats sparingly

When the importance of all these points has been appreciated it seems to me that in performing gastro-enterostomy one must endeavour to preserve as nearly as possible the natural condition of things. Finney's operation (an extensive pyloroplasty) fulfils best this desideratum, but it is by no means always applicable. The fact that Finney's operation is productive of such good results in suitable cases lends great support to what I say.

The opening in the operation of gastro-enterostomy must be made as near the pylorus as will permit of a "comfortable" position of the duodeno-jejunal portion to be anastomosed. By fixing this portion to the stomach in a more antero-posterior line than is usually done one finds that the opening can be made an inch or two nearer the pylorus.[13] (Of course there must be no kink formed in the upper part of the bowel.) This margin may make all the difference afterwards.

The opening should be a large one, as I think it is of great importance that it should *provide* "*drainage*," when this is necessary, not of the cardiac portion but *of the pyloric portion*, and thus allow exit into the jejunum of the hyperacid gastric contents when projected into the pyloric from the cardiac end. This will at once place the pyloric end practically at rest compared with its previous restlessness in attempting to overcome the resistance of the irritated and spasmodically contracted pyloric sphincter. The tendency to prolonged acidity in the pyloric end will be neutralised by "the entrance of the alkaline pancreatic juice and bile" (Paterson).[14] These two factors explain the usually immediate cessation of the severe pain of ulceration after gastro-enterostomy.

The escape of the acid chyme is not prevented by the pyloric sphincter and takes place into the jejunum through the new stoma at an early period and will stimulate pancreatic secretion at an earlier stage than previously occurred in the patient. As Mr. H. J. Paterson points out, there will then be a correspondingly earlier diminution of the gastric secretion and therefore the hyperacidity will be reduced. The early escape of foodstuffs from the stomach by diminishing normal chemical stimulus might account in large measure for this, as previously pointed out. The "abnormal excitation of the gastric mucosa which results from spasmodic stenosis of the pylorus" (Paterson) will of course be done away with.

I believe that the tonic contraction of the pyloric portion and of the sphincter aditus vestibuli is the usual and essential factor in preventing regurgitant biliary vomiting. The action of the muscular coats of this part is stronger than that of the jejunum, hence will prevent any more than a very localised escape of bile and pancreatic juice into the stomach, unless placed in such impossible conditions of vicious circle as the frequent kinking in the old loop method produced. In uncomplicated cases of gastro-enterostomy I have found, on passing the stomach tube, that bile is not present in the cardiac end of the stomach.[15] If the passage of the tube causes attempts at vomiting it is quite probable that the increased intra-abdominal pressure, especially in cases where dilatation existed previously, will cause regurgitation of bile and pancreatic juice into the cardiac end. I believe that the cases of biliary vomiting which I have heard of occurring after the no-loop method are probably due to the fact that the anastomotic opening has been made in the cardiac enlargement where the bile probably causes irritation and is vomited. In certain cases, of course, it is no doubt due to malposition of the anastomosed bowel. Even when the opening has been made in the cardiac enlargement, the muscular action of the cardiac end may keep or force back bile into the jejunum and thus prevent vomiting, but in cases of atony of this part the bile and pancreatic juice may follow the line of least resistance, fill up the cardiac end, and be vomited. Mr. Moynihan's case,[16] in which the whole of the bile and pancreatic juice had to pass back through the pylorus owing to the operative closure of the duodenum, does not necessarily prove that bile is non-irritating to the stomach. He does not record to what portion of the stomach the jejunum was attached—probably to the part presenting in the wound (the pyloric portion), in which case the bile would pass almost immediately into the jejunum. All the same, in many cases, "bile" in *small* quantity does not appear to cause irritation in the cardiac end. When fatty food is taken in excess the

[13] On the eve of sending this paper for publication I have read Mr. B. G. A. Moynihan's article on "The Treatment of Chronic Diseases of the Stomach," Surgery, Gynæcology, and Obstetrics, January, 1908. In it he advocates this "vertical" position of the jejunal loop.

[14] THE LANCET, Sept. 21st, 1907, p. 815.

[15] I have obtained stomach contents (from two to four hours after a meal) from six cases operated on during the past six months. The specimens were examined by Dr. J. M. Macqueen in the Physiological Department, Aberdeen University. In five there was no trace of bile. (In one of these the attempt to pass the stomach tube caused vomiting.) In one there was a very faint trace of bile. In this case, pericolonic adhesions, found at operation, may have caused slight obstruction in the efferent loop of jejunum.

[16] Brit. Med. Jour., May 11th, 1901.

normal mechanism of the pyloric apparatus is evidently in abeyance. Bile and pancreatic juice are allowed to gain their way to the cardiac part in small amount, upon which the fat there is partly digested—a marvellous provision of nature for the benefit of the gourmand.

In the majority of cases I believe that the opening *is* made in the pyloric portion but, so far as I can make out, with no proper, definite precaution to attain that end. The stomach is usually pushed *down* through an opening in the mesocolon and, if the pyloric portion is contracted, the cardiac enlargement may easily be substituted for it. The plan, introduced I think by Professor H. Littlewood of Leeds, of pushing the intestine *up* through the hole in the mesocolon and making the junction with the stomach in more normal position (after tearing an opening in the omentum to get at the posterior wall of the stomach), makes it much more certain that the anastomosis is made in the pyloric portion. The thought occurs—Should one make the anastomosis in the cardiac enlargement if ulcer of the cardiac end exists, risking regurgitant vomiting, or making a Roux's (Y) operation right away? Personally, I do not think so. I have followed the usual plan in such cases of cardiac ulceration as have come under my care and the only difference I have noticed is that the pain took longer to disappear than in pyloric ulcer. The explanation of the cure is the same as in pyloric ulcer.

It is quite possible that making the anastomotic opening in the cardiac portion may explain the occurrence of jejunal ulcer after gastro-enterostomy, especially in the old loop or Y operation. The persistent trickle of acid secretion from the cardiac end compared with the intermittent ejection through the pyloric stoma may so affect a particular part of the jejunal mucosa that ulceration occurs, as the acidity is less likely to be immediately neutralised.

With regard to the effect of gastro-enterostomy on the motility of the stomach, as to whether it is a "drainage" operation, Mr. Paterson's observations,[17] to my mind, prove nothing. The point is, What part of the stomach does it "drain"? A careful operator, like Mr. Paterson, is unlikely to make the opening in the cardiac enlargement and therefore in his cases food will *not* pass *at once* into the jejunum. It will, as he shows, have practically the same nutritive value. I venture to say, however, that his reasoning with regard to these facts is wrong. They do not necessarily support his contention that gastro-enterostomy is not a drainage operation. It must procure drainage or, rather, act as a short circuit or a "safety valve" before it can bring about the good effects which it does. In Cannon's observations on cats, which are so frequently referred to, in the greater number of cases the opening was evidently a small one, and food preferred to pass through the pylorus. In the only case in which the opening was without doubt a large one, food passed more readily through this opening. This is what should be aimed at in the human subject. I point out that these experiments were carried out in presumably normal animals and therefore the conditions are not comparable to those demanding gastro-enterostomy in the human patient, in whom pyloric spasm or actual stenosis compels food to pass through the new opening at all events until spasm has been relieved by more normal reaction of the gastric contents. There need be necessarily no marked effect on the emptying power of the cardiac portion when the opening in the operation of gastro-enterostomy is made in the pyloric portion. (The nutritive value of the food should then be as good as in any other individual. It may be better so far as the patient is concerned than before operation.) In the majority of operations the cardiac portion is certainly not drained, and it is into this portion that the tube is passed in order to draw off the gastric contents after a test meal. Mr. Paterson's findings appear to me to form a strong argument in favour of the "two compartment" theory I have put forward.

Results obtained with the "salol test" uphold my contentions. In repeated observations with this test, when the operation is done as I have indicated, *there is practically no departure from the normal in the results obtained.* These remarks apply as well to cases of pyloric spasm (with ulceration in the neighbourhood) as to cases of cicatricial stenosis. If gastro-enterostomy meant drainage of a "one compartment" organ, then the salol ought to reach the small intestine and hence appear in the urine at a much earlier period, especially in cases of actual pyloric stenosis.

In conclusion, I should like to say that recently I have endeavoured to practise what I have been preaching, and the results are, to my mind, all that could be desired. Since the no-loop method was introduced the results of this operation have vastly improved, i.e., practically since the opening has *not* been made in the cardiac portion. Before the introduction of this method absence of evil results, if the Y operation was not done, was hailed with satisfaction. Now it is looked for almost with certainty. I venture to assert that with attention to the points I have mentioned fortuitous openings in the cardiac portion will be avoided and the results will be more satisfactory still.

To sum up. (1) The cardiac and pyloric portions of the stomach are distinct in development, structure, function, and pathology. (2) During the early stage of gastric digestion the pyloric portion is normally empty and tonically contracted. When food has attained a proper chemical reaction in the cardiac enlargement it passes into the pyloric portion. (3) Bearing this in mind, care should be taken in performing gastro-enterostomy to make the opening in the stomach wall within the pyloric portion, as near the pylorus as possible. This will, then, if the stomach has not irremediably lost its muscular power, provide against an "uncontrolled escape of the acid gastric contents," which is asserted by Dr. H. C. Cameron[18] to occur in cases of gastro-enterostomy. If pyloric spasm be present the stoma will act as a safety-valve and remove the spasm. If pyloric stenosis exists the natural condition of things will be most nearly approached and the "regulating action" (Pawlow) of the pylorus, so necessary to perfect digestion, be most nearly approximated.

Aberdeen.

[17] Loc. cit.

[18] Brit. Med. Jour., Jan. 18th, 1908.

NIGHT BLINDNESS.[1]

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WHEN a patient comes to us complaining of inability to see in the dusk or in foggy weather we at once think of the disease commonly known as retinitis pigmentosa. If we were practising in India we should be much more familiar with patients complaining of this symptom and should be less likely to attach the same importance to it. There have recently been several excellent examples of retinitis pigmentosa in my clinic and you have had the opportunity of making yourselves fully acquainted with its peculiarities. It is only necessary for me, therefore, to review very briefly its principal features. The routine examination of the patient shows that there is comparatively little disturbance of central vision, though there are exceptions to this rule. Examination of the fundus shows in the early stages in young patients a zone of characteristic retinal pigmentation in the neighbourhood of the equator; both peripheral and central to this zone the retina looks almost or quite normal. I need not dwell upon the striking characters of the pigmentation—the spots shaped like bone corpuscles and the aggregations along the perivascular sheaths of the retinal vessels. At this stage we may expect to find a ring scotoma on examination of the field of vision. My senior clinical assistant, Mr. M. L. Hepburn, has recently devoted much attention to the nature of this scotoma and has shown amongst other points that it is seldom complete, but is dotted over with areas in which vision is only partially lost. Probably these areas are closely related to the distribution of the vessels, but for an exhaustive discussion of the subject I must refer you to Mr. Hepburn's admirable paper in the last number of the Hospital Reports. At a later stage the zone of pigmentation has extended both peripherally and centrally, and the field now shows uniform contraction, the peripheral area of vision having become abolished. The progress is usually very slow and central vision is seldom lost by the extension of the choroido-retinal disease to the macular area. Before this occurs a posterior cortical opacity appears in the lens, which, however, has much the same effect upon the visual acuity. This so-called idiopathic retinitis pigmentosa is a progressive form of chronic night blindness. It is an obscure disease in which heredity and the consanguinity

[1] From a clinical lecture delivered at the Royal London (Moorfields) Ophthalmic Hospital on Feb. 1st, 1908.

of parents play some considerable part. In reality the chorio-capillaris of the choroid seems to be first attacked, the retinal degeneration being secondary. As you are aware the outer layers of the retina are nourished by the chorio-capillaris and in retinitis pigmentosa the inner layers show comparatively little change. These facts help us to a reasonable conjecture as to the exact causation of the night blindness.

You will remember that in birds which seek their prey at night, such as the owl, the retina contains only rods; there are no cones in the neuro-epithelial layer. You will also remember that the visual purple is associated with the rods only, so that in animals possessing a fovea, where the rods are absent, there the visual purple is also absent. I may further remind you that with low illumination in man there is much more rapid depreciation of central than of peripheral vision, so that we may reasonably conclude that vision in these circumstances is chiefly carried out through the agency of the rods. Form sense, dependent upon the cones, quickly diminishes in passing from the point of fixation towards the periphery, but at night acute appreciation of variations of light and shade is much more important than accurate delineation of objects. These considerations may afford some explanation of the night blindness in retinitis pigmentosa, as well as of the partial nature of the annular scotoma and the comparative perfection of central vision. Of course, it is not suggested that the cones escape destruction in the affected zonular area, but their loss is discounted by their relatively unimportant functions in this situation.

There is another chronic form of night blindness which we occasionally meet with, differing from retinitis pigmentosa in the fact that it is stationary. This form is always hereditary and shows no gross changes in the fundus. It is a rare disease except in the families afflicted with it, when as has been recently shown in a very striking manner a large proportion of the members are attacked. Thus Mr. E. Nettleship has continued the work of Cunier on a certain family in the south of France and has discovered no less than 135 subjects of congenital night blindness amongst 2121 members of 10 generations, the first member of which, a male, himself night blind, was born in 1637. Unfortunately, no case of this disease has been examined anatomically; it may possibly be found that the retina is deficient in rods or visual purple.

A group of cases of chronic night blindness in some respects intermediate between idiopathic retinitis pigmentosa and congenital night blindness is that of syphilitic pigmentary retinitis. It does not show the same uniformity either of symptoms or of objective signs that are characteristic of idiopathic retinitis pigmentosa. The night blindness is progressive during the active stage of the disease but may then remain stationary for an indefinite period. Fundamentally, however, the night blindness must be regarded as due to the same pathological processes. Besides these chronic forms of disease manifesting this symptom there are also acute forms. Though these show a great variety of clinical types there is nearly always one feature common to all—namely, malnutrition. They are probably much less frequently seen in England now than formerly owing to the improvement in the conditions of the poor. We generally meet with them in badly nourished children and a large proportion of them have xerosis of the conjunctiva. The combination of these symptoms is not so invariable as is sometimes thought. Many cases of xerosis without night blindness and *vice versâ* occur. In some cases the cornea becomes ulcerated and in the worst there is keratomalacia; in many of these the age of the patient or the severity of the attendant symptoms prevents the demonstration of night blindness. One fact which may be definitely deduced is that there is no inherent relationship between the xerosis and the night blindness other than a common cause.

Acute night blindness was at one time common among sailors, soldiers, and the inmates of prisons and workhouses. In Russia it was, and probably still is, common during the Lenten fast. Uhthoff, amongst 500 cases of severe alcoholism, found 5 per cent. suffering from xerosis, night blindness, or both together. Less frequently night blindness has been found associated with scurvy, malaria, nephritis, the puerperium, vegetarianism, and so on. Most of these patients have reflex blepharospasm ("photophobia") in bright sunlight. That in many, most likely all, the lesion is peripheral is shown by Mr. Nettleship's interesting observation that if a sailor afflicted with the disease covers up one eye during the daytime that eye has sufficiently good vision at night for the man to carry out the duties of the watch. It would appear, therefore, that malnutrition acts by lowering the vitality of the retina in such a manner that the process of repair is delayed. Probably the visual purple is restored more slowly than normal—that is, the anabolic processes are defective. To call the condition torpor retinæ and to regard this as an explanation is futile; it is simply describing the condition by another name.

Another group of cases of night blindness, allied to those last mentioned but deserving separate treatment, are those associated with jaundice. The symptom is not very uncommon in severe cases of jaundice. In some pigmentary changes of slight degree have been found in the retina and the condition has been dignified with the name ophthalmia hepatica: in most the ophthalmoscopic signs are negative. It is noteworthy in this connexion to recall the fact that bile salts are a solvent of the visual purple, as was shown by Kühne. Night blindness is common in India among badly-nourished natives, especially during the periodic famines. It has been found that the symptom disappears when the patients are fed on liver, a fact difficult to correlate with the cases occurring with jaundice. The mode of treatment is of extreme antiquity, being advocated in the Ebers papyrus (B.C. 1500).

A CASE OF ANEURYSM OF THE FEMORAL ARTERY IN A MAN, AGED 78 YEARS,

IN WHICH SUPPURATION TOOK PLACE FROM PNEUMOCOCCAL INFECTION; RECOVERY.

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FOR the history and many details of this case we are indebted to Dr. A. Bevan who attended the patient throughout his illness.

The patient was an old man, aged 78 years, living in a hotel who was suddenly taken ill with a rigor and a temperature of 104° F. on Jan. 18th, 1907. He had a cough and rapid respiration but there were no signs in his chest until two days after the onset of his illness. Consolidation of the upper lobe of the right lung was then found. This was followed by a patch of dulness at the angle of the left scapula and at the right base. The temperature touched normal on the third day of the illness and then fluctuated between 100° and 103·4° until the eighth day, when there was a pseudo-crisis with a rise next day to 101·2°. It then fell again on the tenth day to 96·4°. The temperature fell to 96·4° three times with intervening slight rises to 97·2°, remaining subnormal for the following ten days. There was a very dangerous collapse during this time. The pulse-rate fell from 98 to 60, and sometimes could not be counted, as many beats failed to reach the wrist. The heart sounds were very faint from the combined effect of emphysema and feeble action but no cardiac murmur was heard at any time during the illness. The expectoration was of the "prune-juice" type rather than rusty. Dr. H. G. Turney, who saw the patient in consultation with Dr. Bevan, reports that "the pneumonia was clinically on the whole of the influenza type, though the termination was by crisis. The physical signs varied a good deal from day to day; there never was really massive consolidation and he sweated a good deal all through the attack." The patient remained in a low and feeble condition with a subnormal temperature until Feb. 10th. He then improved and the temperature became normal, but from the 20th onwards evening pyrexia (99°) was constant. There was also at this time a little swelling of the left leg and foot from œdema, and a local swelling was noticed about the middle of March in the course of the femoral vessels which was thought to be due to thrombosis of the left femoral vein. In April Dr. Bevan found that this swelling pulsated and regarded it as an aneurysm. Towards the end of April it began to increase in size and the pulsation appeared to be nearer the surface. On examination it was found to be a large swelling situated in Hunter's canal on the left side, with inflammatory exudation into the tissues around, or the aneurysm may even then

have begun to leak. In the latter case its size would be in part due to extravasated blood. It is also of some interest to notice that the femoral artery could be traced over the swelling for an inch or more both above and below its centre. It therefore seemed probable that we had to deal with a sacculated aneurysm situated on the outer side of the femoral artery in Hunter's canal. In this position it would be able to cause compression of the vein against the bone and œdema of the leg and foot. This œdema of the left leg was the first indication of anything abnormal. As the swelling in the thigh increased in size and became more obvious it was again carefully examined and found to pulsate. The central part of the pulsating swelling at the end of April was quite soft and appeared to be approaching the surface. There was evening pyrexia rising to 100°. His arteries were thick and tortuous and the heart action was rather feeble. An operation therefore at the age of 78 years caused us some anxiety. On the other hand, the pulse could be felt quite plainly at the ankle, and it was hoped that ligature of the femoral artery just above the aneurysm at the apex of Scarpa's triangle would be sufficient to arrest its progress. The aneurysm with its surrounding swelling now occupied the middle of the left thigh just reaching to the apex of Scarpa's triangle.

On May 2nd, four months after the onset of the pneumonia, the femoral artery was ligatured just above the margin of the swelling. Dr. Bevan gave the anæsthetic and had a good deal of anxiety over his patient, who showed signs of cardiac distress during the operation. Mr. C. A. R. Nitch gave much valuable help and assistance. The sheath was unusually adherent to the artery which had very thick walls and was rather tortuous in its course. Two double strands of floss silk, making four ligatures in all, were passed beneath the artery and separately tied without dividing the coats. Pulsation in the aneurysm and at the ankle was arrested by the ligature. The pulsation never returned at the ankle, but in the aneurysm it was occasionally detected on careful examination during the next fortnight. The foot remained warm and of good colour throughout. The temperature began slowly to rise after the sixth day from the date of the operation, when the sutures were removed. From May 10th to 22nd there was pyrexia (102°) every evening, although the wound appeared to be perfectly sound and to have healed by first intention. The aneurysm, on the other hand, whilst the temperature was rising, steadily increased in size, and finally gave one the impression of being an abscess. It roughly extended from the inner side of the knee to the buttock; the most prominent part was situated about the centre of the inner side of the thigh. As it was still doubtful whether the swelling was due to extravasated blood or to suppuration the blood was examined and the result strongly suggested suppuration.

On May 23rd an anæsthetic was given by Dr. Bevan and with Mr. Nitch's assistance an incision was cautiously made through the centre of the swelling. What appeared to be blood escaped in large quantities. Having preserved some of this fluid in sterile tubes the cavity was fully explored and found to be very large, extending far beyond the limits of the original aneurysm. As it did not appear now that there was any direct arterial communication with this cavity and that the fluid was old softened blood-clot, the wound was left open without either a drainage-tube or gauze plug being inserted. The dressing had to be frequently renewed as there was a constant discharge of a large amount of blood-stained fluid. At each dressing this fluid could be squeezed out of the wound and on careful measurement amounted in 24 hours from five to eight ounces. The temperature during this time dropped from 102° to 101°. As no further diminution of the discharge or fall in the temperature took place an anæsthetic was given on June 11th and the wound was freely enlarged. Two counter openings were also made, one towards the knee and the other at the back of the thigh towards the gluteal fold. A drainage-tube was introduced into each opening. The highest temperature in the 24 hours quickly dropped to 100°, and by June 20th it was only 99°. The whole thigh also began to diminish in size, the œdema of the foot disappeared, and the patient improved rapidly in general condition. By the end of June the discharge was of slight amount and the highest temperature was always below 99°. Our anxiety was thus at an end. On July 14th, when the wounds were nearly healed, the temperature rose slightly and he complained of pain in the left groin. The femoral artery, which had been previously pulsating up to the seat of the ligature, could not be recognised below Poupart's ligament, and œdema of the leg and foot was again apparent. Thrombosis of the artery from the seat of the ligature up to Poupart's ligament had obviously taken place. In about a week's time the pain had gone, the temperature was 99°, and the artery could be felt as a solid cord up to and beneath Poupart's ligament. The œdema of the foot, however, remained. The last drainage-tube was removed on July 21st. Early in August he was able to leave London for Mr. H. C. Crouch's home at Ascot. The wounds were practically healed and the œdema had almost disappeared. There was slight pitting on pressure over the shin but none on the dorsum of the foot. The artery in Scarpa's triangle was a painless solid cord. Once again, at the end of August, he had an attack of inflammation in the left groin. Pain, tenderness, and swelling round the femoral artery with a slight rise of temperature gave the same indications as before, and naturally aroused a suspicion of further extension of the thrombosis. But as there was no œdema of the foot it was hoped that the inflammation was confined to the part previously affected, and that there was no extension of the thrombosis to the external iliac artery. Within a week the attack had disappeared, leaving the artery as it was before.

Pathological report.—On May 21st an examination of the blood was made with a view to determine, if possible, whether suppuration had occurred in the aneurysmal sac. The result was as follows: leucocytes, 22,740 per cubic millimetre. A differential count of 500 cells was made, of which 86 per cent. were polymorphonuclear neutrophiles and 1·25 per cent. the Ehrlich type of neutrophilic myelocytes.

A bacteriological examination of the contents of the sac of the aneurysm was obtained on May 24th. Film preparations were made from the coagulated blood which had been received in sterile tubes. The cells were chiefly microphages, the remainder macrophages. Diplococci were numerous; they were Gram-positive and the majority were extracellular. A pure culture of the diplococcus was obtained from the coagulated blood. This organism was found to be the pneumococcus. It gave the reactions which are most commonly obtained in the artificial media employed by Andrewes and Horder for the differentiation of the streptococci. On May 27th a second bacteriological examination was made. The contents of the tubes consisted of blood-stained *pus*, in which there were large numbers of both extra- and intra-cellular Gram-positive diplococci. A pure culture was obtained but on this occasion the organism was extremely difficult to cultivate and died out very rapidly. On June 4th a third examination was made. Film preparations of the pus showed numerous Gram-positive diplococci. A few bacilli were also present. The cultivation experiments were found to be sterile.

This case is of interest, even if it were regarded merely as an example of suppuration in an aneurysm without reference to the intrinsic cause, but owing to the fact that the pneumococcus was obtained in pure culture from the contents of the aneurysmal sac, and that the patient had only recovered from acute pneumonia quite recently, it may be considered as a case of exceptional rarity in surgical pathology. The first question which naturally arises is whether an aneurysm was present previously to the attack of pneumonia. Dr. Bevan tells us that he is unable to answer this question. If we allow that a small aneurysm of the femoral artery was present previously to the acute illness, then probably either a clot in the interior of the sac became infected by the pneumococcus, or an atheromatous patch in the wall of the aneurysm became the seat of an acute infection by this organism, with subsequent thrombosis. It has already been stated that the contents of the aneurysm, when first received in the laboratory, consisted of coagulated blood, which had undergone acute inflammation, while a few days later true suppuration had occurred. If we allow for the sake of argument that there was no aneurysm previously to the acute pneumonia, then we have to decide whether the patient developed an acute embolic aneurysm as a result of infective endocarditis, or whether the atheromatous condition of his arteries led to direct pneumococcal infection of the wall of the femoral artery.

It is well known that even the most severe forms of infective endocarditis may not be diagnosed during life, but even allowing for this fact there was no reason to suspect in the case under discussion that acute endocarditis had occurred. Dr. Turney, who was called in to consultation

on several occasions with Dr. Bevan, saw no reason to suspect infective disease of the endocardium. There were no cardiac murmurs during the whole course of the illness. The pyrexia at one time corresponded to the attack of acute pneumonia and later followed the course of the acute infection of the femoral artery. As soon as the suppuration was relieved the temperature fell to normal and has remained normal ever since, except for slight pyrexia which lasted for a few days during the period of convalescence.

An acute embolic aneurysm which develops during the course of acute infective endocarditis is characterised by its rapidity of formation, and also by a considerable amount of pain at the seat of infection. It cannot be said that either of these phenomena was present in the case under discussion. Perhaps the most important argument against infective endocarditis is that the patient continues in good health and shows no evidence of cardiac disease. The other explanation which we have already referred to is that the patient developed an acute pneumococcal infection of an atheromatous patch in the femoral artery. Careful consideration of the facts of the case strongly suggests either direct infection of the artery leading to the formation of an aneurysm or direct infection of an aneurysm which was present previously to the acute illness. In either case the pathology is somewhat similar. The slow and feeble action of the heart, which was such a noticeable feature in the first few days after the crisis, and the alteration in the coagulability of the blood which is so commonly found in such conditions, would favour the formation of thrombosis either in the sac of an aneurysm or over an atheromatous patch in a degenerated artery. It is impossible to say whether acute infection of the arterial wall took place previously to, or subsequently to, the formation of thrombosis. In either case the pneumococcus, which may probably be regarded as the cause of the acute pneumonia, set up an acute arteritis which finally gave way into the surrounding tissues. It is probable that the infection of the tissues took place through the wall of the artery before actual leakage occurred. In any case, whether the aneurysm was primary or secondary, it appears to have been of the sacculated variety, and direct communication between the sac and the vessel was obliterated before the aneurysm was opened. It is unfortunate that it is impossible to say at what period of the patient's life the aneurysm was formed, but at any rate this does not detract from the great interest which centres round such a remarkable condition.

THREE CASES OF POISONING BY CARBONIC OXIDE; ONE RECOVERY.

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LATE MEDICAL OFFICER OF HEALTH, WIGAN RURAL DISTRICT.

CASES of poisoning by carbonic oxide appear to me of sufficiently rare occurrence to justify a description of those which recently happened in the workhouse infirmary, Leighton Buzzard, for such a tragedy to take place in the wards of an institution the arrangements of which had been passed by expert engineers is fortunately uncommon and has a special interest.

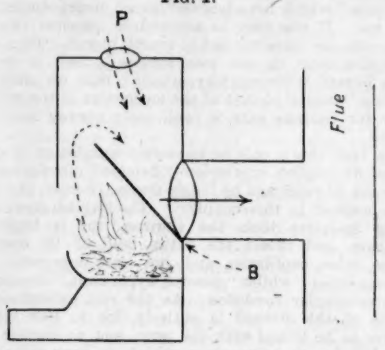
On the night of Jan. 20th three women retired for the night in a small ward and at 9 P.M. were known to be in their usual health. A fire had been lighted in the stove as on this day the ward had been cleaned and it is probable that the women had closed the only ventilator before going to bed. On the following morning at 7 A.M. a workhouse inmate went to call the women and found them, as she thought, all dead. There was no smell in the room and the gas was burning, and the fire in the stove was still just alight. The three women were lying as if asleep. On further examination one of them, aged 76 years, was found to be alive, the workhouse master, Mr. Swaffield, at once with commendable promptitude performing and continuing artificial respiration, thus most probably saving her life. The other two women, aged 52 years and 47 years respectively, were quite dead. The master sent at once for Mr. L. Worts, the medical officer, to whom I am indebted for my subsequent conduct of the case and for permission to publish these notes. I was sent for at 10 A.M. on the morning of Jan. 21st and found a woman, aged 52 years, and a woman, aged 47 years, lying dead. The body of the first woman had been removed from the bed to the floor. She was quite dead; some white foam was issuing from the mouth. Her attitude was one of repose and her complexion and lips were fresh and of a bright cherry colour. The body was warm and rigor mortis was hardly discernible. The body of the second woman was on the bed; the face was pallid and she had vomited some pultaceous matter. She lay on her back with her arms folded over her chest; rigor mortis was marked and the body was quite cold. The third woman, aged 76 years, was lying on the floor, totally insensible, the conjunctival reflex being absent. The pupils were equal and of moderate size. She was practically pulseless and was breathing stertorously, the cheeks blowing with each expiration. Respiration was slow (about 12 to the minute), the lips and mucous membranes were bright, and the complexion was clear. Both wrists showed abrasions the result of the continued efforts at artificial respiration, and it was noted that the reddened skin around the wrists had a peculiarly bright hue. As there was no information to go upon, and as there was a suspicion that all three had partaken of the contents of a mysterious parcel left by a visitor, after injecting $\frac{1}{10}$th of a grain of strychnine I decided to wash out the stomach. This was done with warm water and afterwards with weak Condy's fluid till the washing was clear; the washings were first of a coffee-ground colour. I then gave one and a half ounces of brandy through the stomach-tube, and after injection of ether and the application of the interrupted current in the course of the phrenic nerve, after about three hours the pulse improved, the conjunctival reflex returned, and she responded to outside stimuli. Oxygen was sent for but she recovered before it arrived. She was ordered to be fed per rectum with "panopeptone" and by 6 P.M. she was able to take it by the mouth, and she is now out of danger but can remember nothing of what happened.

Realising that the desperate illness of the third woman must be brought about by the same cause which had led to the death of the other two I decided to make a spectroscopic examination of the blood of the living woman and, being fortunate in possessing an excellent stellar spectroscope, used it with most decided results. A drop of blood from the finger was received into a test-tube two-thirds full of normal saline solution and the tube was shaken up; the resulting solution was of a bright cherry colour. On being placed before the slit of the spectroscope there were seen the two absorption bands of CO hæmoglobin most distinctly, and the reaction was unaltered on the addition of ammonium sulphide. Next day I was present at the post-mortem examination made by Mr. Worts. Both bodies presented similar appearances. The blood 30 hours after death was perfectly fluid and cherry-red in colour. The muscles, too, were bright red. There was no blood clot found at all. The mucus membranes were all bright red and the complexion fresh. The stomach of one woman was empty and presented numerous petechial hæmorrhages, and similar hæmorrhagic points appeared in the cerebral white matter on section; the cerebral ventricles were full of fluid. In both cases the lungs were markedly œdematous and the kidneys showed interstitial nephritis; the capsules were adherent. I took specimens of blood from both dead women and examined them as before, with a like result, the spectroscope giving definite evidence of CO hæmoglobin.

The cause of the carbonic oxide in the atmosphere was, on investigation, not hard to find. At first I thought that it must be due to the permeability of red-hot cast iron to gases, but since then I have had an opportunity of examining the stove with the representative of the firm who manufacture them. The stove is of ornamental cast iron with doors in front which can be opened; on the top is a circular aperture covered by an ornamental perforated cap. The stove stands in the room about two feet from the fire-place, which is blocked up. A six inch cast-iron horizontal pipe passes into the brick flue, terminating on its entrance. The flue is a long one leading from the floor below, one flue common to both landings. Inside the stove is a flame baffler, which when rightly set serves to direct the heat into the room and direct the current both from the fire and the chamber at the top of the stove into the flue. Instead of being set thus the baffler was set as shown in the diagram, thus allowing any products of combustion which passed the baffler to come into the room (Fig. 2). The

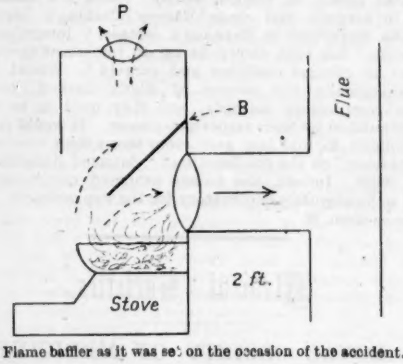
room is oblong, 18 feet × 12 feet × 11 feet high, and has a gabled roof; there are two windows on one side and a curtained door at the other. Above the door is a primitive ventilator formed by a wooden flap which is opened and closed from outside. This I am told if left open the patients close. It appears that the night of Jan. 20th was cold and heavy and the patients closed the ventilator and windows. Most probably when the stove burnt low the

FIG. 1.



B, Flame baffler as it should be set. P, Perforated cap on the top of the stove.

FIG. 2.



B, Flame baffler as it was set on the occasion of the accident.

draught was insufficient to force its way into the long cold column of air in the brick flue and found an easy exit past the flame baffler into the room.

The case was full of interest especially as regards the different times of the deaths of the patients; the youngest evidently succumbed first and the other some time later, while the eldest alone survived. The insidious nature of the poison is apparent; all the patients appear to have slept away undisturbed, while the surviving one now has no recollection of anything unusual having happened. The definite proof by the spectroscope of the cause of death is also satisfactory; and the danger arising from the imperfect fixing of what are supposed to be innocuous stoves is an important point which cannot be passed over lightly.

Leighton Buzzard.

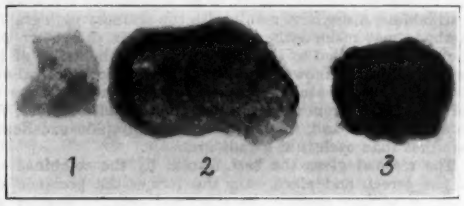
ROYAL UNITED HOSPITAL, BATH.—The annual meeting of the subscribers to this hospital was held on Jan. 29th. Mr. S. Bush, the ex-mayor, was awarded a special vote of thanks for his successful efforts in raising a fund of £6214 to free the hospital from debt. It was stated that the legacy from the late Dr. J. Bennett would result in an additional income of £700 per annum. The financial statement showed that there was a deficit of £654 on the working of 1907, and the committee decided to pay this off from capital so as to commence 1908 absolutely free from debt. The medical report was satisfactory.

A METHOD OF X RAY EXAMINATION IN CASES OF URINARY CALCULUS.

BY C. J. MORTON, M.D. EDIN.,
SURGICAL RADIOGRAPHER TO GUY'S HOSPITAL.

IN the examination of cases of suspected urinary calculus with the present x ray methods the results are not always trustworthy. While there is this uncertainty more reliance must be placed on the clinical symptoms and as these are frequently misleading accurate diagnosis is impossible and many cases are left unrelieved or are operated on unnecessarily. The chief reason for this appears to be that there is no satisfactory way of testing the efficacy of the rays and of estimating whether they are in the proper quantity and of the requisite penetrating quality to suit the particular case.

I have recently adopted a simple method by which it is possible to obtain not only more trustworthy information when stone is present, but also in most of the negative cases to demonstrate definitely that no stone can be present. It consists in the use of a set of calculi of known composition and size as a means of testing the actual effects of the rays while they are passing through the patient. These test calculi are placed between the focus tube and the patient, so that the rays pass first through the calculi and then through the part of the patient to be examined. If the rays are of sufficient strength shadows of the individual calculi will appear on the fluorescent screen and be readily recognised. If no shadows can be seen it means that the rays are inadequate and they must be modified in quantity or in penetrating quality to suit the individual case. The figure shows a radiogram of the calculi employed taken directly, not through the patient's body. Sections of three stones are



mounted in a wooden handle with a metal end. Analysis of the remaining portions showed that No. 1, next the metal end, is composed of pure uric acid. The radiogram, however, shows that there are also some faint traces of more opaque matter, probably phosphates. No. 2, in the middle, is a fusible calculus of mixed phosphates, and No. 3 is a mixed stone, with a nucleus of urate of ammonium, a layer of oxalate of lime, and a coating of triple phosphates. Their relative size and density are shown in the radiogram. The oxalate stone is $\frac{3}{16}$ths of an inch and the uric acid and phosphate each $\frac{1}{4}$ of an inch in thickness. Discs of metal of corresponding density would be equally serviceable and much more easily obtained. In using this as a test the patient is placed on a couch and a focus tube fitted with a small diaphragm is moved about underneath the couch so that all the suspected area can be searched by the central rays. The examiner's eyes must be made sensitive to x ray impressions by resting for ten minutes in the dark or for from 15 to 20 minutes in a very subdued diffused light. A handle of about 12 inches in length is useful to get the stones into position and also to move them about, as they are then much more easily detected on the screen than when they are stationary.

When the shadows of the test have been obtained they are used as a standard with which any opacities in the patient can be compared and a more accurate opinion formed of their size, density, and nature. But perhaps the chief clinical value of the method is that it provides a means of deciding absolutely on the absence of stone. It is known that the nearer an object is to the screen the clearer and more defined is its shadow. If, therefore, the test calculi can be seen it follows that the shadow of any calculus of equal density lying in the patient and therefore nearer to the screen will also be seen. If no such shadow is visible no calculus can be present. With a suitable focus tube and

good apparatus it will be found that the test shadows can easily be obtained in ordinary cases.

In the same way the method can be used to test the effects on the photographic plate. This is of special value when, owing to the stoutness of the patient, the shadows cannot be shown on the screen. The plate is much more sensitive than the human eye to x ray impressions and under certain conditions its results are more accurate. A radiogram is taken with the test placed between the tube and the patient in the same manner as in the screen examination. If the test shadows show on the plate another radiogram taken under exactly the same conditions, but without the test, will show any calculus in the patient. The tube, however, varies considerably during even one ordinary exposure and a quite accurate result can only be obtained by taking a radiogram to include both sides of the patient and with the test on the side opposite to that under examination. This is especially useful in renal cases. When an image of the test is shown through one kidney it can be used as before to compare any opacities in the other renal area or to prove that if there is no opacity there is no stone.

A convenient plan, when the test shadows cannot be seen with the calculi between the tube and the patient, is to place the test immediately under the screen. The rays now pass first through the patient and then the calculi and therefore an image of the test will not prove that a calculus in the patient must also be seen. But if the rays can show the test they will be found sufficient to give a definite image of any calculus in the patient on a radiogram.

In a comparatively small number of cases, those of very stout patients, it will be found impossible to show the test calculi by any method. In these the x rays are valueless and the diagnosis must be made from the physical signs and clinical symptoms. But it is of great practical importance to differentiate these patients from the large number in which it can be proved that no stone is present and thus to decide whether or no an exploratory operation is justifiable. A negative result with the ordinary radiographic methods may mean either that no stone is present or that the rays have failed to show it, and unless the value of the rays employed is known the diagnosis is of no practical use. Even in a simple case a good photograph showing all the so-called typical diagnostic signs may, and sometimes does, fail to show a stone and, from its very photographic excellence, be worse than useless as a radiogram.

The method gives the best results by the combined use of the screen and plate. On the former the presence and position of any opacity, its size, and relative density are noted, and especially when there is any movement on respiration, whether it is synchronous with that of the kidney shadow or of the intestines. The information obtained in this way can then be verified by a radiogram and in doubtful cases by re-examining any suspicious areas. Calculi placed outside the body have previously been demonstrated and a useful modification of the method described has been employed in searching for foreign bodies in the œsophagus, stomach, &c. In cases of urinary calculi it is in the systematic use of the method that its value lies, and in providing a standard of comparison and a practical means of estimating the actual diagnostic value of the x ray results.

Welbeck-street, W.

"DAMMED CIRCULATION" AND "INTERRUPTED CIRCULATION."

A NOTE IN NOMENCLATURE

By WILLIAM EWART, M.D. CANTAB., F.R.C.P. LOND.,

CONSULTING PHYSICIAN TO ST. GEORGE'S HOSPITAL; SENIOR PHYSICIAN TO THE BELGRAVE HOSPITAL FOR CHILDREN.

THE expression, "Bier's method," is a sufficient description for the initiated, but for others it offers no suggestion as to what is meant. In the past this same method failed to develop and to spread so long as it stood without a name of its own, and identified in literature merely as "v. Dumreicher's method."[1] At present there is no lack of names; the only inconvenience is their variety and, according to Dr. Alfred R. Allen,[2] their inaptness. "Passive congestion," "passive hyperæmia," "stasis hyperæmia" are all unsatisfactory for him and, with perhaps too little faith in our own language, he proposes to look elsewhere for the word. Of course, in our complicated clinical craft there is much in a name. Names should be accurate, but also if possible telling in suggestions and in reminders; and it is precisely because agreeing with the practical purpose entertained by Dr. Allen that one rather shrinks from the formidable Teutonism "Stauungshyperämie" which he advocates as an improvement for our daily use. If one may be allowed to question two of his statements, we have *not* had to search in vain "for a concise descriptive term in our own tongue"; and it is hardly in the phrase "Stauungs-hyperämie" that we shall find a complete "mental picture of the mechanics of the method": except for German ears it could only convey *ignotum per ignotius*.

As a fact, this is only an imperfect translation of our own original descriptive expression "dammed circulation," first used some 30 years ago by Hugh Owen Thomas, the pioneer of the method in this country.[3] The English name is more strictly inclusive than the German, for it implies the manœuvre and covers the entire field of its operations, arteries, veins, capillaries, and, not least important, *plasma and lymphatics;* whilst "passive hyperæmia" connotes only the intravascular condition. As the vast extension of the benefits of the method is entirely due to Bier his name deserves to be linked with the term, and no further excuse is needed for the suggestion which is now submitted in favour of the adoption in this country of the expression, "Bier's method of dammed circulation," which may ultimately be found a convenience in others. But there is another reason, of clinical utility. Since the Esmarchian era in surgery, and since Harvey Cushing's happy use of the tourniquet in Raynaud's disease, "interrupted circulation" has been shown to be an important therapeutic agent in clinical medicine and surgery.[4] Whilst this is physiologically the reverse of Bier's method, both are vessel-compressing methods, and they need to be strictly distinguished by their respective names. It would probably be difficult to find less ambiguous terms than "interrupted circulation" on the one hand and "dammed circulation" on the other. Indeed, the names proposed might almost be said to be mutually explanatory for the two methods.

Curzon-street, W.

[1] Cf. Karl Nicoladoni: v. Dumreicher's Methode zur Behandlung drohender Pseudo-arthrosen, Wiener Medicinische Wochenschrift, 1875, Nos. 5, 6, and 7.

[2] Medical Record, Jan. 4th, 1908.

[3] Cf. The Principles of the Treatment of Fractures and Dislocations. Contributions to Surgery and Medicine, part vi., June, 1886.

[4] Interrupted Circulation as a Therapeutic Agent: Illustrated in Two Cases of Rheumatoid Arthritis, THE LANCET, August 13th, 1904, p. 442; also Transactions of the Royal Medical and Chirurgical Society, vol. lxxxix., 1906.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SURGICAL SECTION.

Coxa Valga.

A MEETING of this section was held on Feb. 11th, Mr. J. WARRINGTON HAWARD being in the chair.

Mr. A. H. TUBBY read a paper on Coxa Valga. He said that coxa valga was an opening out of the angle made by the head and neck of the femur with the shaft, in some cases to such a degree that the upper extremity of the femur and the shaft appeared to be almost in a straight line. It was the opposite condition to coxa vara, in which the head and neck of the femur sank down until they were placed at a right angle, or even less, with the shaft. A considerable degree of terminology and mensuration had grown up in connexion with the deformities of the upper end of the femur. The most important was the angle of inclination, otherwise called the angle of depression, the cervical angle, or the angle of the femur. It was estimated by drawing one line through the long axis of the shaft of the femur, and a second line through the long axis of the head and neck. The angle formed on the inner side of the point of intersection was the angle of inclination. Other lines and angles were Hoffa's line, Alsberg's angle, Alsberg's triangle, and the angle of declination. A list of museum

specimens of coxa valga and an account of the cases hitherto described in literature were then read, and particular stress was laid upon two cases of Galeazzi of Milan, in which he had operated for the condition, and one by Nathaniel Allison. As to the causes of coxa valga, they were classified as follows: congenital, which were subdivided into those in conjunction with congenital dislocation of the hip, and those not associated with abnormalities elsewhere. Considerable stress must be laid upon the coexistence of coxa valga and congenital dislocation of the hip, and its importance was great. Coxa valga might not only be a determining factor in displacement of the head from movement at or after birth, but dislocation once having occurred the nearly vertical position of the neck and head of the femur induced great difficulties in satisfactory replacement. Mr. Tubby then cited three cases occurring in his own practice of congenital dislocation of the hip with coxa valga and showed x ray photographs and two cases. In one instance of dislocation of the left hip the angle of inclination was 169°. In a second case, with double dislocation, the angles of inclination were 172° and 164°, and in a third case, with dislocation of the left hip, the angle was 154°. A second cause was traction exerted by a pendent limb, such as occurred in extensive infantile paralysis of the lower extremity, and in those instances where amputation through the shaft of the femur had been required. A case was shown of infantile paralysis of the right leg, together with x ray photographs taken in three positions—namely, with the leg fully everted, fully inverted, and with the foot to the front. The angle of inclination was found to be respectively 204°, 128°, and 150°, thus showing 76° of difference in the various positions of the right limb, as compared with 27° in the left limb. Static conditions were also influential in causing coxa valga, particularly genu valgum and scoliosis, and a case in point was shown. A traumatic form had been frequently described, following injuries of the neck and shaft of the femur, and an instance which had come under Mr. Tubby's care was exhibited, in which, after mal-union of the middle of the shaft of the femur, the angle of inclination was found to be 152°. The deformity was also met with associated with rickets and processes of bony softening affecting the neck of the femur, such as osteomyelitis and tubercle. Some authors had also described an idiopathic form but the evidence as to the existence of that was not clear. Referring to the pathogenesis, Mr. Tubby said it could be shown that the normal shape and position of the head and neck of the femur depended upon the nice adjustment of certain forces—namely, weight-pressure, resistance of the bone, and muscular effort. If any one of those factors, or all of them, were varied in degree, altered in direction or destroyed, changes took place conformable with Wolff's law, and the head and neck of the femur assumed different positions and directions. The cardinal symptoms were abduction of one or both lower extremities, associated with external rotation and limitation of adduction. Pain and spasm were often experienced at the beginning of the affection and the gait in unilateral cases was limping, with the trunk inclined towards the affected side. In bilateral cases it was rolling and unsteady. The limb was frequently lengthened to as much as two or three centimetres and it was abducted and rotated out, whilst movements of adduction and internal rotation were limited. Trendelenburg's sign was reversed and the patient when standing on the affected limb inclined the body towards that side. Flattening over the great trochanter was often noticeable, and lumbar scoliosis, with its convexity towards the affected limb, was sometimes present. Very important evidence was obtained by skiagraphy and the fallacies in connexion with that were discussed. The diagnosis must be made from coxitis with abduction of the limb, from sacro-iliac disease, and from congenital dislocation not complicated with coxa valga. With reference to the treatment, various forms of operation had been performed—namely, cuneiform osteotomy of the neck, removal of a wedge of bone with its base inwards from the sub-trochanteric region, and linear osteotomy through the base of the neck. According to the conditions and surroundings of the patient one of the last two plans should be chosen.

After Mr. C. G. WATSON had made a few remarks, in the course of which he observed that he could not understand how the weight of the body could cause the condition described, Mr. TUBBY replied, and the meeting terminated with a demonstration by him of several patients.

CLINICAL SECTION.

Exhibition of Cases.

A MEETING of this section was held on Feb. 14th, Sir THOMAS BARLOW, the President, being in the chair.

Mr. J. P. ROUGHTON showed a case of Tumour of the Right Side of the Face. The patient was a boy, aged 11 years. The whole of the right side of the face, with the exception of the region below, and to the right of, the mouth, was occupied by a swelling of a doughy consistency, the upper eyelid especially being very swollen. This swelling crossed the middle line on the forehead and upper lip. There were many cords and knots distributed throughout the swelling, especially on the forehead, over the parotid, and in the cheek, and there was a distinct cord running immediately behind the facial artery over the ramus of the jaw. There was no pulsation. The swelling could not be diminished or displaced by pressure. There was no loss of sensation or movement except that the latter was very much impaired by the infiltration of the tissues and the muscles readily reacted to faradism. There was no leucocytosis. There was an enlarged gland under the sterno-mastoid. Eight years ago the mother noticed that the right eye looked smaller than the left and shortly afterwards the outer canthus began to swell, whence the swelling had gradually spread. The family history was good. He was at school till last December, when he left on account of pain in the upper eyelid which lasted about a fortnight and which was the only occasion on which he had had any pain.—Mr. R. J. GODLEE considered it was a case of plexiform neuroma and this was also the opinion of Dr. F. PARKES WEBER.—Mr. W. G. SPENCER and Mr. GODLEE agreed in recommending an exploratory operation and Dr. G. A. SUTHERLAND related the details of a similar case reported by him to the Clinical Society.

Dr. H. L. EASON demonstrated a case for Dr. HERBERT S. FRENCH of Tumour of the Mediastinum (? hydatid). The patient was a female, aged 42 years. She looked perfectly well and her only complaint was that she could not see properly with her left eye. For that she had seen Dr. Eason at Guy's Hospital. The cause of the defective vision was inability to accommodate. There was complete paralysis of the left cervical sympathetic nerve. That dated back for over two years. There was slight but decided ptosis of the left upper eyelid; the left pupil was continuously small; the patient could not blush upon the left side of her face and when she perspired the right side of the face sweated but the left did not. Further examination showed distinct fulness of the left external jugular vein and the veins over the upper part of the left chest in front were distinctly fuller than those over the corresponding part of the right side. Examination of the chest with the stethoscope showed complete absence of vesicular murmur and of voice sounds over the region where the upper two-thirds of the upper lobe of the left lung ought to be. The conclusion was that in the region of the left upper lobe there was a mass nearly as big as a good-sized orange, large enough to displace or to destroy the lung there, to extend back far enough to compress the cervical sympathetic nerve, and forward enough to compress the left innominate vein. The length of history and the general condition of the patient pointed to its not being malignant; there had been no improvement under treatment by mercurials and iodides, so that gumma seemed unlikely. The x rays showed a perfectly globular mass, not connected with the aorta (a point less obvious in the skiagrams than it was when the screen was used in different positions of the patient), and of a size precisely corresponding with the diagnosis made. Hydatid cyst was suggested as a possibility, chiefly on account of the perfectly globular character of the mass. The patient had no symptoms or signs of hydatid cyst elsewhere in the body.—This case was discussed by Dr. C. THEODORE WILLIAMS, Dr. A. E. GARROD, and Dr. CYRIL OGLE.

Mr. GODLEE showed a case of old-standing Dislocation of the Patella with Osteo-arthritis of the Knee in a man, aged 50 years, and Skiagrams of an old Fracture of the Humerus, with Osteo-arthritis of the Elbow. The patient with the dislocated patella was a labourer who said that his right knee had been out of shape since birth. He knew of no injury in early life. It did not cause him much, if any, inconvenience until he had a blow upon it six months ago, since which time his knee had been painful. On flexing the knee the patella slipped right over to the outer side of the joint. There was marked genu valgum and the signs of osteo-arthritis were unmistakable. The patient was not the

subject of locomotor ataxy and there was no indication that he suffered from infantile paralysis. The case illustrated the fact that dislocation of the patella need not necessarily interfere much with the utility of the knee and suggested that an injury to a joint in early life might determine the onset of osteo-arthritis in the joint so affected. The skiagrams of the case of old fracture of the humerus were from a patient, aged 34 years. 21 years ago, when the patient was aged 13 years, he injured his right elbow; he said it was dislocated, but he did not know whether it was fractured. Three and a half years ago a small, painful swelling appeared near the elbow, which was treated in hospital. Soon afterwards a swelling appeared on the inner side of the back of the forearm, two inches below the internal condyle, which increased in size during the last year till it reached that of a walnut. It proved to be a "ganglion" with a thin wall, the pedicle of which extended up towards the joint along the internal intermuscular septum. The clear, jelly-like contents were evacuated and the pedicle was cut short. The wound healed by first intention. The skiagram showed an old fracture of the internal condyle and irregular masses of bone attached to both the upper ends of the ulna and the radius. The movements of the joint were almost perfect. The case illustrated the good result which might sometimes be obtained after fracture of the lower end of the humerus. It also suggested that an injury to a joint in youth might determine the onset of osteo-arthritis later in life. There was at present, however, no creaking in the joint. No signs of osteo-arthritis had been discovered in other joints.—After Mr. T. H. OPENSHAW and Dr. SEYMOUR TAYLOR had spoken, Dr. F. J. POYNTON remarked that osteo-arthritis could be produced experimentally in an uninjured joint—an injury might diminish the resisting power of a joint to some infection.—Dr. GARROD concurred with the view expressed in regard to lowered resistance.

Dr. SEYMOUR TAYLOR showed a case of Ruptured Aortic Valve. The patient, a man, aged 34 years, who had worked with lead for nearly two years, complained of tightness across the chest, a choking sensation on exertion, and a buzzing noise in the chest, which he heard best when lying down. These symptoms supervened suddenly after the strain of lifting a heavy weight. He denied having had syphilis or acute rheumatism but had twice suffered from lead colic. He had a typical blue line at the edge of the gums. On palpation over the cardiac region a diastolic thrill was felt, most intense over the second and third spaces on each side. On auscultation a loud murmur was heard, loudest over the aortic area, diastolic in period, and musical in tone. The musical note corresponded to about B below the staff. That point was of some interest, as a similar observation was made in a previous case which he had shown before the Clinical Society (*Transactions*, vol. xxxvi.). The murmur was heard all over the chest and even over the upper thirds of the humeri. The condition of the valve was probably one of perforation of one cusp rather than of detachment or true rupture. That diagnosis was made on the following grounds, viz.: (1) the sudden onset of urgent symptoms after a strain, pointing to valve injury; (2) the musical diastolic murmur; and (3) a marked diastolic thrill. If a cusp were torn from its attachments one would expect to hear harsh noises, and also to feel a thrill, not only during diastole, but also during systole.—Sir J. F. H. BROADBENT narrated a case in which rupture of an aortic valve was diagnosed, but it was found at the necropsy to be one of acute aortitis.—Dr. POYNTON observed that it was possible for an aortic valve to be ruptured without the patient experiencing pain, perhaps only complaining of a little discomfort.—Dr. THEODORE WILLIAMS said a ruptured aortic valve might act as a valve below the level of the other two valves.—After Dr. PARKES WEBER had spoken Dr. SEYMOUR TAYLOR replied.

Dr. ARTHUR LATHAM showed a case of Caseating Pulmonary Tuberculosis treated with Tuberculin (T.R.) and Horse Serum, both given by the mouth. The patient was a man, aged 26 years, who on June 3rd, 1907, was seized with acute pneumonic tuberculosis of the left lower lobe. He had continuous fever till the beginning of October when he sought advice at Brompton Hospital for Consumption. He was admitted to St. George's Hospital on Oct. 8th and kept in bed for one month without reduction of the fever and without any evidence of improvement. On Nov. 6th 10 cubic centimetres of horse serum with $\frac{1}{10000}$th mgrm. tuberculin were administered by the mouth, followed by a drop in the temperature to normal for two days. On Nov. 9th the temperature again rose to 101° F. A further dose of serum and tuberculin was given on Nov. 11th. On the 12th the temperature was subnormal. On the 13th the temperature again rose. On the 20th and 21st serum and tuberculin were again administered with immediate effect. The temperature remained normal till Dec. 12th when the patient was allowed up; that was followed by immediate auto-inoculation and fever. A further administration of serum and tuberculin again reduced the temperature, which remained near the normal till Jan. 3rd. On that date three doses of serum (10 cubic centimetres) and tuberculin $\frac{1}{10000}$th mgrm. were administered, with the result of a summation of negative phase and increased temperature. That proved a temporary affair. For the last month the temperature had been normal or subnormal. The patient was up and about. The weight had increased 17 pounds and the sputum diminished from 6 ounces to ½ ounce. The physical signs in the left lower lobe were those of a dry cavity.—Dr. PARKES WEBER said the case might have some bearing on the feeding of consumptive patients with tuberculous meat.—Dr. THEODORE WILLIAMS thought it was important to examine the expectoration for traces of lung tissue.—Dr. LATHAM, in reply, said that immunisation by tuberculous meat was a possibility and experiments in connexion with that point were being carried out at the Pasteur Institute.

Dr. PARKES WEBER showed a case of Spurious (?) Acromegaly. The patient was a woman, aged 46 years. The case was shown because of its remarkable resemblance at first sight to acromegaly. The patient was married, rather corpulent, and very anæmic. Her face and head, with the large lower jaw, prominent chin, and big nose, could be used as a model for an illustration of acromegaly. She had thick, fleshy hands and thick fingers, but she had no ocular symptoms of acromegaly and her occasional headaches and shortness of breath seemed to be connected with her anæmia, which in its turn might be accounted for by frequent hæmorrhoidal bleeding from which she had suffered during the last six or seven years. There was no amenorrhœa, as there was in many genuine cases of acromegaly. Moreover, there was no evidence of any progressive change having occurred in the shape or size of the hands, feet, face, skull, or other bones of the body since she ceased growing at the ordinary age. An old photograph (the only one obtainable for comparison) which was taken three or four years ago showed her face looking just as it did now. She had had six children, all healthy, and at least one of the daughters somewhat resembles the patient in the shape of her chin. The case had probably been more than once accepted as one of genuine acromegaly.

Mr. SPENCER showed a case of Lateral Curvature rapidly developing in a boy, aged three years, who was an inmate of a Poor-law school, and was all at once noticed to have a marked lateral curvature, the only previous observation being that he seemed a little anæmic. He had a marked left thoracic and lumbar scoliosis and walked with lordosis; both of the curvatures disappeared when he was suspended by the arms. The muscles of the left side of the spine appeared unduly weak, the abdomen was irregularly protuberant, but there was no definite hernia, either inguinal or ventral. The hæmoglobin was 74 per cent. Beyond that examination had discovered nothing distinctly abnormal; the reflexes were normal, the muscles of the spine reacted to faradism and galvanism; no muscles were absent.

Mr. R. P. ROWLANDS showed a case of Excision of the Body of the Scapula. The patient was a man, aged 35 years, from whom the whole of the body of the left scapula had been excised for enchondroma 15 months ago. It was possible, and deemed advisable, to save the coracoid process with its important muscles and ligaments, the glenoid cavity with the capsular ligament of the shoulder-joint, and the acromion process with the attachments of the deltoid and trapezius to it. The patient showed that both the disability and the deformity following that procedure were much less than after complete excision of the shoulder-blade. The man had been able to do his work as a painter's labourer from two months after the operation. Extreme abduction was the only movement that was imperfect. Radiograms were exhibited to show the comparative effects of the operation adopted in the patient and of complete excision of the scapula for extensive sarcoma by Mr. L. A. Dunn, who had kindly allowed Mr. Rowlands to make use of his case. Photographs were also exhibited which showed the differences of function and degree of deformity in the two cases. Rotation of the shoulder-joint

was limited to one-half the natural extent and the abduction to 45° in the case of complete excision. A posterior T-shaped incision was used and through that the three groups of large vessels were tied early in the operation to minimise hæmorrhage. It was claimed that preservation of the processes and glenoid cavity was both practicable and advisable in preference to complete excision of the scapula for inflammatory conditions and innocent growths and possibly for some malignant growths.

Mr. OPENSHAW showed a case of Multiple Dislocations, including congenital dislocation of both hips, in a child two weeks old, incontestably the result of malposition in utero. The patient was taken to him as an out-patient at the London Hospital on Feb. 7th last presenting dislocation of both shoulders, both elbows, both hips, and both knees, and extreme double equino-cavo-varus. The child otherwise was well formed; the cranium presented no deformity. There were a large umbilical hernia and a history of snuffles. The mother had five other children and had had three miscarriages. The position in which the child lay in utero could be definitely reconstructed. The limbs in their abnormal position fitted closely to the body; the hips fully flexed, the knees hyper-extended, and the feet twisted into the position of equino-varus. The arms were flexed and rotated in at the shoulders and the hands were situated in the armpits in a position of acute flexion at the wrists. The head and neck of the right femur were rotated outwards upon the shaft to an angle of 30°. The head was dislocated and lay outside, and in front of, the anterior superior spine. The thigh was acutely flexed on the abdomen, the inner surface of the femur resting in contact with the abdomen. The condyles were visible in the popliteal space, the knee being retroflexed to an angle of 100°. The knee could only be flexed even with force to an angle of 160° and immediately dropped back to an angle of retroflexion of 110°. There was extreme congenital equino-varus, the os calcis resting on the leg and the sole of the foot looked upwards. The scaphoid was the lowest bone of the tarsus. The left leg presented a similar condition, except that the knee was hyper-extended to an angle of 110° and could only be flexed to an angle of 170°. The left foot presented the same condition as the right; the scaphoid was the lowest bone. There was a large funnel shaped umbilical hernia which bulged between the knees when the legs were in the position in which they were in utero. There was a subcoracoid dislocation of the right shoulder. At the right elbow both bones were dislocated backwards and outwards. There was marked pronation of the right forearm. The fingers were well formed but excessively hyper-flexed at the metacarpo-phalangeal joints. The transverse metacarpal ligaments were extremely stretched, so that the heads of the metacarpals could be separated and the hand stretched out to a width equal to double the length of the palm. The left arm presented a similar condition. Mr. Openshaw considered that it was incontestably a case of congenital dislocation of hips, knees, shoulders, and elbows from intra-uterine malposition. He had seen two other cases where congenital dislocation of the hip had been associated with congenital recurvation of the knee and talipes in the same leg due to intra-uterine malposition and pressure.

Mr. C. A. R. NITCH showed a case of Myositis Ossificans in a girl, aged 10 years. The disease commenced in the muscles of the neck when the child was aged three and a half years and within a few months the pectoral, scapular, and lumbar muscles were involved. Plaques, bosses, and spicules of bone could be felt in the following muscles: the erector spinæ, latissimus dorsi, trapezius, and pectorales of both sides; the right rhomboideus major and minor, the left rhomboideus minor, the left levator anguli scapulæ, the left infra-spinatus, the geniohyoid, the sterno-mastoids, the right vastus externus, and the muscles in the popliteal space. Microdactyly of both great toes was present. The back and neck were now quite rigid, movements at the shoulder-joints were very limited, full extension of the right leg was impossible, and owing to the fixation of the thorax respiration was purely diaphragmatic.

Dr. F. E. BATTEN and Dr. J. GRAHAM FORBES communicated a note on two cases of Infection with the Bacillus Enteritidis of Gaertner. They described two cases of prolonged fever and diarrhœa in infants, the blood of whom, though repeatedly tested, gave a negative Widal reaction. The first was that of a child, aged 12 months, in whom the disease lasted for 35 days. On the nineteenth day the blood was tested with the bacillus enteritidis of Gaertner and gave a marked reaction. Purpura developed during the course of the disease. The child died and at the necropsy numerous ulcers were found throughout the small intestine. A pure growth of a Gram-negative motile bacillus was obtained from the spleen and mesenteric glands. The organism gave the characteristic reaction of the bacillus enteritidis of Gaertner. The second case was similar but towards the termination developed symptoms suggestive of a general tuberculous infection. The child died and at the necropsy no evidence of tuberculosis was found. The bacillus enteritidis of Gaertner was isolated from the stools.

LARYNGOLOGICAL SECTION.

Exhibition of Cases and Specimens.

A MEETING of this section was held on Feb. 7th, Dr. J. BARRY BALL, the President, being in the chair.

The following cases and specimens were shown:—

Dr. F. PARKES WEBER: A case of Multiple Hereditary Developmental Angiomata (telangiectases).

Sir FELIX SEMON (for Dr. SIDNEY P. PHILLIPS): A case of Multiple Telangiectases.

Dr. A. BROWN KELLY: Sketches of three patients with Multiple Telangiectases.

Dr. J. DONELAN: (1) Specimen and microscopic sections of a Tumour of the Thyroid Gland from a case shown at the last meeting; and (2) a case of Intranasal Hypertrophy associated with continual sweating of the nose.

Dr. STCLAIR THOMSON: (1) A case of Syphilitic Pachydermia; (2) a case of Proptosis due to distension of the frontal sinus; and (3) a radiograph to show how the orbito-ethmoidal and frontal cells can be defined before operation.

Dr. P. WATSON WILLIAMS: (1) Microscopic sections illustrating the pathogenesis of some forms of Nasal Polypi; and (2) a universal Laryngeal Forceps for use by the direct and indirect methods.

Dr. W. JOBSON HORNE: A case of Unilateral Paralysis of the Tongue.

Mr. W. J. CHICHELE NOURSE: (1) A case of Sarcoma of the Nose after operation; and (2) a case of Epithelioma of the Tongue and Fauces after operation.

Mr. W. STUART-LOW: A case of Complete Closure of the Anterior Nares with Partial Atresia of the Pharynx; and (2) cases after the Radical Maxillary Antrum Operation exemplifying a simplification of the after-treatment.

Dr. ANDREW WYLIE: A case of Swelling of the Arytenoid.

Mr. HERBERT TILLEY: A case of Early Epithelioma of the Vocal Cord.

Mr. C. A. B. HORSFORD: A girl, aged 17 years, with a baritone voice.

Dr. DAN MCKENZIE: A case after removal of an Endothelioma of the Palate.

Dr. J. DUNDAS GRANT and Dr. DAN MCKENZIE: A case after operation for Median Cervical Fistula.

Dr. W. H. KELSON: A case of Nasal Ulceration.

Dr. DUNDAS GRANT: A case of Epithelioma of the Fauces.

Dr. G. WILLIAM HILL: A case of Laryngeal Tuberculosis.

OPHTHALMOLOGICAL SOCIETY.

Some Primary Facts of Colour Perception.—Exhibition of Cases.

A CLINICAL evening of this society was held on Feb. 13th, Mr. E. TREACHER COLLINS being in the chair.

Dr. F. W. EDRIDGE GREEN gave a lantern demonstration on Some Primary Facts of Colour Perception, and an interesting discussion resulted in a resolution being passed, on the proposition of Mr. C. D. MARSHALL, that a committee of the society should be appointed to go into the question of colour-blindness and the tests for its detection and to report to the society.

Mr. L. J. PATON showed a case of Detachment of the Retina treated by operation. The patient had been sent to the National Hospital for the Paralysed and Epileptic with the diagnosis of double optic neuritis and the remark that both nasal fields were lost. The right eye had been useless for 36 years and for a year there was mistiness in the left. Vision was then $\frac{5}{6}$; now it was $\frac{6}{5}$. To get at the main point of detachment he trephined above the tendon of the external rectus and pulled the eye well forward by a tenotomy hook under the external rectus. He cauterised through the sclera until the subretinal

fluid escaped and aspirated the rest with a lacrymal syringe. He then perforated the retina above and below. In the middle of January the field was quite full.

Mr. HORSFORD showed a case of Buphthalmia with Malformation of the Iris, and the causation of the condition was discussed.

Mr. J. F. CUNNINGHAM showed an Orbital Case for Diagnosis. It was thought to be apical periostitis, or caries of the apex of the orbit, or an optic nerve tumour.

Mr. J. H. FISHER showed a patient with Microphthalmia and a case of Fundus Changes resulting from injury at birth. The second of these patients was born with great difficulty and there was a huge hæmatoma of the left frontal region, and soft tissues in the right temple and orbit were much damaged and lacerated by forceps. Possibly the optic nerve was damaged and there was hæmorrhage from the lacerated vessels into the hyaloid canal, the clot forming the basis for the connective tissue organisation. He did not think there was any shrinking of the globe.

Mr. P. C. BARDSLEY showed a case of Retinitis Proliferans. A large bundle of connective tissue came forward into the vitreous. He regarded it as congenital, as there were a large detachment of the retina and only a very small field. There was no history of injury, either at birth or since, but the eye had been defective as long as the parents could remember.

Mr. C. WRAY showed a case of Follicular Conjunctivitis which he considered to be perfectly curable. It was contagious, and among 1400 children in the Croydon schools there were 12 cases of the condition.

Mr. J. H. PARSONS showed a patient the subject of a condition which he thought was probably Metastatic Neuro-retinitis. A woman had a glistening mass of exudate over the left disc with considerable swelling and some hæmorrhages on the disc. Then she suddenly lost the sight of that eye. The exudate diminished, leaving a glistening white star resembling that seen in albuminuric retinitis. She had no albuminuria.

SOCIETY OF ANÆSTHETISTS.

The Status Lymphaticus in Relation to General Anæsthesia.

A MEETING of this society was held on Feb. 7th, Dr. R. J. PROBYN-WILLIAMS, the President, being in the chair.

The discussion on Status Lymphaticus adjourned from the last meeting was resumed by Mr. R. GILL who congratulated Dr. W. G. McCardie on his paper and directed his remarks chiefly to two features which Dr. McCardie had mentioned as existing in the status lymphaticus—viz., (1) some naso-pharyngeal obstruction, and (2) anæmia. These two factors were very intimately connected with the action of chloroform. Patients with nasal obstruction exhibited a long induction period and anæmic people required very little chloroform. A combination of these conditions produced a patient to whom it was difficult and dangerous to give chloroform. And this combination occurred in people who were not subjects of status lymphaticus. It was difficult to see that there could be any relation between the enlargement of such organs as the spleen, liver, glands, &c., and susceptibility to chloroform, so he concluded that there was not sufficient evidence that the status lymphaticus in itself was the cause of these deaths under chloroform.

Dr. DUDLEY W. BUXTON could not agree that Dr. McCardie's conclusions followed his premisses. He could not help feeling that the status lymphaticus which had been discovered in many cases of deaths under chloroform was coincidental and not causal. Dr. McCardie had used the word "idiosyncrasy," but he (Dr. Buxton) did not believe in idiosyncrasy to chloroform. Everybody had his dose for chloroform and it was the duty of the anæsthetist to discover it. There were two schools as to the cause of death in these cases: one said they were cases of respiratory obstruction, the other called them cases of syncope. The pathological conditions in status lymphaticus would produce more or less respiratory obstruction, and if expiration in particular were obstructed the chloroform would become locked up in the chest and absorption and poisoning would occur, especially as the myocardium in status lymphaticus was feeble to start with and the dilatation from chloroform might not be recovered from. As to these deaths being due to syncope, Embley and Martin had shown that a certain percentage of chloroform in the circulation would prevent vagal inhibition, but that with a larger percentage vagal inhibition would not be prevented and would not be recovered from. If a given percentage of chloroform enabled a heart to escape from vagal inhibition in a normal patient might not a patient the subject of status lymphaticus with the same percentage of chloroform not escape vagal inhibition and not recover from it? Patients with status lymphaticus required less chloroform. Syncopes and asphyxias might be avoided by regulating the dose and only giving as much as was required. Some German authors referred to "thymus deaths" in adolescence, but these people did not die as suddenly as the ones under chloroform, they had glottic spasm, vomiting, &c., more like post-chloroform poisoning. The latter was probably due to lymphatic hyperplasia.

Dr. J. BLUMFELD disagreed with Dr. McCardie who doubted if death ever occurred from chloroform *per se*; many cases had been reported in which status lymphaticus was not present, and even in some of Dr. McCardie's own cases status lymphaticus was probably not present, especially some of the cases of goitre. Dr. Blumfeld also disagreed with Mr. Gill who seemed to doubt the existence of the status lymphaticus as a pathological entity; and finally he disagreed with Dr. Buxton in considering all these deaths as due to simple over-dosage, because cases had been reported in which corneal and movement reflexes were present when death occurred.

Dr. J. F. W. SILK regarded the enlargement of tonsils and adenoids in these cases as important factors in causing death. The signs and symptoms of status lymphaticus were so numerous and widely distributed that any case of death under chloroform might be dragged into the status lymphaticus net. He pleaded for a better definition of the condition and agreed with Dr. Buxton that they should, and usually did, avoid trouble by adjusting the dosage to the patient's requirements.

Dr. LL. POWELL asked if pathologists could say whether a persistent thymus was not occasionally found in people dying from some independent disease.

Dr. G. A. H. BARTON said that the status lymphaticus was a question for the pathologist. How could it be recognised? Might not a committee be formed to make blood counts of all patients anæsthetised to see if it were dangerous to give chloroform to people with lymphocytosis? Might not some deaths be due to too little and not too much anæsthetic? Dr. Barton did believe in idiosyncrasy to chloroform; he had seen idiosyncrasy to iodide, belladonna, and morphine, then why should it not occur to chloroform? But even if the physiologists were right that 2 per cent. of chloroform could not kill, he maintained that 2 per cent. would not always produce anæsthesia and that death might occur from other causes than the anæsthetic.

Dr. BUXTON apologised for getting up again and said that although he held no brief for the physiologists, yet it was possible clinically to obtain and maintain anæsthesia with 2 per cent. of chloroform.

The PRESIDENT said that the question whether status lymphaticus was a clinical entity or not must be left to the pathologists to determine. Until they could point to some more definite lesions it must be considered "not proven." As to Mr. Harvey Hilliard's case, he had invited criticisms and the President saw no reason why the patient should not have been given gas and ether.

Dr. MCCARDIE, in reply to Mr. Gill, said that in no case had obstructed breathing been reported. Anæmia would make the anæsthetist careful to equate the dose of chloroform to the patient's requirements, but he did not think these two factors sufficient to account for the sudden deaths. To Dr. Buxton he said he did believe in idiosyncrasy, and overdose was ruled out because so many cases occurred during light anæsthesia. To Dr. Blumfeld he explained that he did believe death from chloroform might occur apart from status lymphaticus. To Dr. Silk he declared his belief that status lymphaticus was a clinical entity and in one suspected case the x rays showed enlargement of the thymus. He agreed with the President that more pathological work was necessary and referred to the two cases mentioned by Mr. H. T. Wightman in which the status had been diagnosed. As to its mode of action in decreasing resistance to chloroform he did not know, but probably it was due to a form of lymphotoxæmia. He always gave ether when he suspected status lymphaticus.

LIVERPOOL MEDICAL INSTITUTION.

The Treatment of Hæmoptysis by Nitrite of Amyl.—The Physiological Importance of the Calcium Salts.

A MEETING of this society was held on Feb. 13th, Mr. T. H. BICKERTON, the President, being in the chair.

Dr. G. A. CRACE-CALVERT read a note on the Treatment of Hæmoptysis by Nitrite of Amyl. He stated that until recently the treatment of hæmoptysis had not been satisfactory and that nearly all drugs except morphine had been described as useless. Dr. F. W. E. Hare had called attention to the use of the nitrite in checking hæmorrhage and pointed out that it acted partly by causing a marked reduction in the arterial blood pressure and partly by producing an intense anæmia of the lung parenchyma, and so gave time for clotting to take place. Dr. Crace-Calvert had tried it in about 25 attacks of hæmoptysis—many of them profuse—and always found that it checked the bleeding almost instantly. Afterwards if there was excitement of any kind he gave a quarter of a grain of morphine. He considered that nitrite of amyl was the drug *par excellence* to be used first, as it saved the patient unnecessary loss of blood and prevented large accumulations of blood in the air passages. It was especially useful in sanatorium work where the patient was seen at the beginning of the attack.—Sir JAMES BARR congratulated Dr. Crace-Calvert upon pointing out the value to be obtained from the use of nitrite of amyl and such other agents in cases of hæmoptysis. He said that they often heard of blood pressure in numerous diseases without the observers having any clear idea as to what was meant by blood pressure. Blood pressure was purely a relative term, and what might be considered a very high blood pressure in pulmonary tuberculosis would be a low pressure in renal disease. In pulmonary tuberculosis the heart was small and weak, and a comparatively small resistance was more than it could cope with; therefore any slight rise in the arterial pressure in cases of pulmonary tuberculosis was very apt to dam back the blood in the pulmonic system. The great advantage of the use of morphine or morphine and atropine in cases of pulmonary tuberculosis arose from the fact that they generally stopped the cough and thus prevented any rise in the arterial pressure. Personally he had for many years used nitro glycerine in cases of hæmoptysis and as a rule he preferred it to nitrite of amyl because of its more lasting effect. If the blood was deficient in lime salts it was very important that lime salts should be administered.—Dr. NATHAN RAW could not agree that nitrite of amyl had any specific action in the control of hæmoptysis. Whilst one occasionally met with an overpowering hæmorrhage which was rapidly fatal, the fact remained that the great majority subsided spontaneously with care and rest. He could not agree that hæmoptysis was due to increased blood pressure, but rather to erosion of some small blood-vessel. He advocated absolute rest in the recumbent posture, a hypodermic injection of morphine, ice to suck, and cold turpentine applications to the chest. He had seen excellent results from adrenalin chloride in long-continued but small hæmorrhages from the lungs. By lowering the blood pressure it was possible that nitrite of amyl was occasionally useful.—Dr. W. B. WARRINGTON said it had long been recognised that a hypodermic injection of morphine was the most satisfactory drug in the treatment of hæmoptysis and for some years past nitrite of amyl in addition had been the routine treatment at the Northern Hospital.—Dr. A. G. GULLAN said that there seemed to be varied opinions on the blood pressure of pulmonary tuberculosis and he believed that in many cases it was lowered. Yet everyone was well acquainted with the excited and strong action of the heart and the strong and quick pulse which arose on the sudden occurrence of a serious hæmoptysis. The arterial blood pressure was then undoubtedly greatly increased and it was in this condition that the amyl nitrite was beneficial as a rapid means of lowering it. At the same time such good results had been obtained by rest, morphine, and purgatives in the past, and moreover these methods were invariably used in conjunction with amyl nitrite, that he felt too much credit for the good results obtained should not be given to that drug.—Dr. R. J. M. BUCHANAN drew attention to the fact that cases of pulmonary tuberculosis associated with good blood pressure generally did well and that hæmoptysis more often occurred in chronic and relatively favourable cases. The hæmoptysis was in a large majority of cases the result of raised blood pressure in the systemic arteries, and nature pointed out a method of treatment in that the hæmoptysis itself lowered pressure and thus arrested hæmorrhage. Taking the lesson from nature, the use of nitrite of amyl acting in the same way was a rational therapeutic measure and the results justified its administration.—The PRESIDENT, Dr. T. BUSHBY, Dr. T. R. BRADSHAW, and Dr. J. H. ABRAM also took part in the discussion, and Dr. CRACE-CALVERT replied.

Dr. W. BLAIR BELL read a paper on Some Observations on the Physiological Importance of the Calcium Salts. He said that his observations had been made incidentally during the work he was at present engaged upon in reference to the calcium metabolism in menstruation and pregnancy, and he considered them of sufficient importance to bring forward as he himself could not carry them any further. His method of calcium estimation, already described,[1] had been largely employed in the investigation. The diurnal variations and the value to be attached to the blood index and the interpretation thereof were fully described. He discussed what he described as the reparative function of calcium salts and stated that he considered there was always a determination of these salts to an injured or a diseased region. He also thought that there was no such thing as calcareous degeneration *per se*, but rather calcification—a reparative process—in diseased structures. The effect which lime salts had upon involuntary muscles was next mentioned and Dr. Blair Bell alluded to the work of Ringer and others in this direction. He went on to describe the attempts made by himself to discover the regulating factors in the calcium metabolism, and discussed his experiments and observations in regard to the thyroid, pituitary, and other ductless glands, which he considered acted in association, anabolically or katabolically, in connexion with the lime salts. The question of calcium and the coagulability of the blood was discussed and he brought forward evidence to show that the reduction of the coagulability of the blood on the administration of an excess of lime salts was due not to an excess in the blood but to an active resistance or immunity on the part of the subject, or increased excretion brought about probably by thyroid interference. The power which the leucocytes possessed of absorbing calcium probably in solution, and conveying it for the processes of repair and for other functions, was considered and evidence was adduced to show the probability of this property. Lastly, Dr. Blair Bell described some interesting observations upon gelatin and the contained calcium. He illustrated the fact which he had discovered that if calcium is precipitated from gelatin it will no longer coagulate by passing round a control and a specimen prepared several days before.—Sir JAMES BARR said that he considered this one of the most important papers that he had heard for a long time. He had himself been using calcium in disease for many years, and therefore felt very grateful to Dr. Blair Bell for giving a more accurate method for estimating the amount of calcium in the blood. Hitherto they had had to go by the coagulability of the blood, and in such a disease as pneumonia by the amount of the adhesiveness of the secretion. In cases of pneumonia it had a very great value, especially in those cases in which the secretion was liquid or hæmorrhagic. *Cæteris paribus*, the more scanty and viscid the expectoration in pneumonia the better the prognosis; hence in such a disease he had condemned the use of expectorants for many years. The calcium salts had a wonderful effect not only in increasing the secretion but in toning up the vessels. The variable amount of lime salts in the blood at different periods of the day scarcely affected the diseased conditions, because in the infective process the calcium was thrown out of the blood into the tissues, and in such cases there was always a tendency to a deficiency. Sir James Barr also discussed the action of calcium on the blood and circulation.—Dr. BUCHANAN considered Dr. Blair Bell's method of calcimetry by the use of the hæmocytometer sufficiently accurate for clinical purposes and that it stood on a par with erythrocytometry and leucocytometry in abnormal blood states.—Dr. P. HICK said that although the total calcium of the blood was not precipitated by Dr. Blair Bell's method, all the "ionised" calcium was, and that it was in this state that the calcium took part in such active processes as the clotting of blood, and the method gave a measure of the available calcium. Also that the calcium chloride and calcium lactate given by the mouth occasionally gave no

[1] Brit. Med. Jour., April 20th, 1907.

rise in the calcium content of the blood, which seemed to show that in these cases inorganic salts or the calcium salts of the simpler organic acids were not capable of absorption. —The PRESIDENT and Dr. W. GORDON LITTLE also discussed the paper and Dr. BLAIR BELL replied.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF ANATOMY AND PHYSIOLOGY.

The Iliac Colon in Relation to Hernia.—Exhibition of Specimens.

A MEETING of this section was held on Jan. 24th, Professor A. FRASER being in the chair.

Dr. R. A. STONEY read a paper on the Anatomy of the Iliac Colon in Relation to Hernia, which we hope to publish at an early date.

Mr. ADRIAN STOKES exhibited a Fœtus showing Transposition of the Viscera and a Tricœlian Heart. It was obtained by Dr. Henry Jellett in 1896 and was described by him in THE LANCET of March 27th, 1897, p. 878. The fœtus was well formed and lived for a few minutes. Only the thoracic and abdominal cavities had then been opened, but in 1907 Mr. Stokes dissected the specimen and found other abnormalities. The heart had a single large ventricle and two auricles. The left or systemic auricle had no direct communication with the common ventricle, its blood passing through a large patent foramen ovale into the right or pulmonary auricle in order to reach the ventricle. This must be an extremely rare condition. There had been a few cases recorded in which the pulmonary auricle did not communicate with the ventricle, but none, so far as Mr. Stokes could find, in which the systemic auricle did not do so. The pulmonary artery also lay behind the aorta. Professor A. H. Young lately described a case of a tricœlian heart in a man aged about 37 years. In it the chambers of the heart were in their normal positions, but the aorta arose in front of the pulmonary artery. The condition of transposition of the viscera was rare. Only a few cases had been exhibited in Dublin, among which the best known was the one exhibited by Professor Fraser before the Academy of Medicine in 1894.

Professor FRASER exhibited—(1) the Hemispheres of an Encephalon, with well-marked Interruption of Both Central Sulci; and (2) a Duodenum of Unusual Form.

Professor E. P. M'LOUGHLIN exhibited—(1) a case of Dorsal Origin of the Right Subclavian Artery, with associated Vascular Irregularities; and (2) a case of Unusual Position of the Large Intestine.

SECTION OF MEDICINE.

Nephritis.

A meeting of this section was held on Jan. 31st, Dr. J. M. REDMOND, the President, being in the chair.

The PRESIDENT of the Academy (Dr. J. MAGEE FINNY) opened a discussion on the Prognosis and Treatment of Nephritis, limiting his remarks entirely to those inflammations included in the varieties—(*a*) acute nephritis due to toxic influences or exposure to cold; (*b*) subacute or chronic parenchymatous nephritis; and (*c*) chronic interstitial nephritis. He pointed out, however, that in every variety of nephritis there was more or less diffuse inflammation involving the glomeruli, the parenchyma, and the interstitial tissue. He then proceeded to discuss three principal features to be found in these cases: (1) albuminuria, (2) dropsy, and (3) the uræmic syndrome. He called attention to the harm which might be done to a patient's prospects in life by rejecting him for insurance or for admission to a post in the public services on account of albuminuria, pointing out that the condition might be due to adolescence or might be the result of temporary weakness of the heart. The treatment of albuminuria by medicine was as little encouraging as the use of hæmostatics in the hæmaturia of renal inflammation. The indications for treatment were to place the kidneys in physiological rest by cutting off all protein diet, such as meat, soups, beef extracts, and eggs; by feeding the patient at first with starvation diet when the inflammation was acute and the urine bloody and very scanty, and then allowing a very restricted diet of milk and starchy foods, with cream and sugar. The amount of liquid permissible at first must not exceed two pints in 24 hours, as the oliguria was due to renal inefficiency, and it was as harmful to try to produce diuresis by copious libations as by diuretic medicines. As soon, however, as the kidneys showed recovery by secreting more urine it was beneficial to flush them with water, or lemon and water with a small quantity of cream of tartar. This treatment by deprivation of liquids was especially necessary when the oliguria was accompanied by dropsy, local or general. The next indication for the treatment of acute nephritis was to save the kidneys by calling the bowels and the skin into activity. In some cases of acute nephritis where uræmic symptoms were at an early stage developed in a previously healthy and vigorous patient, it was right to bleed to the extent of 15 or 20 ounces from the arm or, as Baccelli had suggested, from the dorsal vein of the foot. In addition to local or general depletion the use of hot-air baths, hot packs, or hot baths was advisable, and in most acute cases of albuminuria or of dropsy this treatment alone would be followed by diuresis. The state of high tension of the arteries might be reduced and regulated by a systematic use of nitroglycerine, trinitrites, or sodium nitrite for weeks and months, as under their use tension was reduced and the left ventricle was enabled to recover from a state of dilatation to the normal state of hypertrophy present in cirrhosis of the kidney.

Dr. HENRY C. EARL read a paper on the Pathology of Nephritis. He confined his attention principally to three main points—(1) the etiology of nephritis, (2) the classification of the varieties, and (3) the changes in the cardio-vascular system.—Dr. R. TRAVERS SMITH said that in nephritis nature had two lines of defence, namely, (1) high arterial tension and hypertrophy of the left ventricle, and (2) œdema. Looking upon œdema, as well as upon high arterial tension, as conservative processes, he thought that there were certain cases of extremely severe uræmic symptoms where it might be a good thing to induce œdema. He had given sodium chloride to a man who had been for some time in uræmic convulsions and coma, with the result that at the end of 24 hours he became markedly œdematous and made a good recovery from all his symptoms.—Sir JOHN W. MOORE said that he concurred with the view put forward by Dr. Travers Smith as to the beneficial influence of œdema in cases of chronic renal disease, with regard to which he had read a paper before the British Medical Association at the Oxford meeting.

FORFARSHIRE MEDICAL ASSOCIATION.—A meeting of this society was held on Jan. 15th, Dr. J. A. Dewar, Vice-President, being in the chair.—Dr. W. J. Dewar showed a boy, aged ten years, the subject of Hæmophilia, who always bled for about three weeks after any cut; a maternal uncle and a younger brother were also affected with the disease. He also showed a boy, aged seven years, the third of the family to be affected with Club-foot.—Dr. J. D. Gilruth showed a young woman who seven years ago had a Gastric Ulcer excised but who since then had periodic attacks of severe pain and vomiting probably caused by adhesion of the stomach wall to the parietes. In May, 1907, Mr. D. M. Greig performed an anterior gastro-enterostomy and since then the patient had remained free from all her former discomfort. —Dr. Gilruth also showed a man, aged 35 years, who had suffered for some years from an Ulcer of the Duodenum upon whom a posterior gastro-enterostomy had been performed.—Dr. Middleton Connon showed specimens of a Salivary Calculus and an Unusual Fœtal Monster in which could be seen only one foot, no legs, arms, or hands. It was a twin pregnancy and the first born was a healthy well-formed live male child.—Mr. Greig read a paper on Ankylosis after Dislocation of the Elbow. He stated that up to recent times considerable doubt existed as to the true cause of such conditions. It had been frequently observed that after an ordinary simple dislocation backwards of both bones at the elbow considerable stiffness with very limited movement at the joint sometimes occurred several weeks after the dislocation had been reduced; this was generally said to be due to a fracture into the joint. Since the advent of x rays it was now possible to determine at the time of the accident if any fracture existed. He described and discussed two cases in detail, including the origin of new bone formation after these injuries such as had caused the ankylosis in his second case and mentioned the theories that had been propounded to account for its

occurrence, of which he had no doubt. Loss of resilience in the soft parts from the swelling associated with a tearing away of the periosteal attachment of the muscle in the efforts to reduce the dislocation had been the starting point of the new growth which, like callus, was derived from the osteoblasts of the periosteum. He discussed the treatment which he intended to adopt and by removing this new growth of bone he hoped to get a good result. He mentioned how careful one had to be when seeing an old injury to the elbow in which there was stiffness not to conclude that there had been a fracture when no opportunity had been given to see an x ray photograph of the condition before and after reduction.—Dr. G. A. Pirie then gave an account of the Routine Use of X Ray Photography in Private Practice and exhibited a series of photographs showing many interesting conditions in bones and chest which had occurred in his practice.——A meeting of this society was held on Feb. 6th, Professor A. M. Stalker being in the chair.—Mr. Greig showed a man after Excision of the Patella for a Chronic Periostitis of that bone. He had been invalided from the naval service as unfit, but as a result of the operation he had once more a perfectly useful limb. On comparing the legs the only visible difference was a diminution in the size of the quadriceps muscle. He commented on the rarity of the operation.—Dr. W. E. Foggie showed a man, aged 48 years, who had syphilis when 28 years of age. Two and a half years ago he had a fall from a horse injuring his right ankle. After this a progressive muscular weakness set in, first in the right leg and passing to the left. Then the right and the left arms became affected and he now exhibited all the symptoms of progressive muscular atrophy, the unusual feature being the onset in the lower limbs following the accident.—Dr. J. S. Y. Rogers showed a man with well-marked symptoms of Raynaud's disease who had been treated for 12 months with x rays for an ulcer in the ear said to be lupus but which was probably Raynaud's gangrene.—Dr. G. F. Whyte showed a man with small ulcers (Raynaud's gangrene) on both ears, who exhibited signs of that disease in both hands, the hands having been affected for several weeks with coldness and stiffness before the ear conditions developed.—Dr. A. J. Duncan read notes on the successful treatment of an obstinate case of Sciatica in a woman by the subcutaneous injection of air. The condition had existed in the left leg for four months and had resisted all the ordinary methods of treatment by drugs, the pain, which was so severe as to cause loss of sleep, only being relieved by morphine. The method adopted was that recommended by Dr. A. S. Gubb of Algiers.[1] Air was pumped into the tissues along the line of the nerve till a condition resembling surgical emphysema was produced. Repeated at intervals of three and five days, this followed by massage of the parts quickly resulted in a diminution of the pain. He quoted in further detail from Dr. Gubb's paper, in which he mentioned many successful cases, and thought that the method was worthy of a further trial.—Dr. G. T. Guild read notes on two cases of Cholesteatoma of the Temporal Bone. He said that some authorities regarded these formations as inflammatory products, others as tumours derived from endothelium, and called them endotheliomata, but Ziegler was of opinion that they had an origin from epidermic epithelium. In the ear they generally occurred during the course of chronic suppuration of the middle ear and were accompanied by a fœtid discharge which might be very scanty and apt to be overlooked. They tended to increase slowly in size and to cause destruction of the mastoid cells and walls of the antrum.—Dr. J. Rogers read notes on a case of Multiple Arthritis which he showed. The patient was a boy, aged six and a half years. He discussed the diagnosis of such conditions.—Dr. G. Halley described two unusual cases of Inguinal Hernia upon which he had operated.—Dr. Whyte described a case upon which he operated similar in many ways to one of Dr. Halley's cases.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 6th, Dr. George Williamson, the President, being in the chair.—Dr. J. Wallace Milne described two cases of Resection of the Bowel for the relief of acute obstruction supervening in a chronic condition of partial obstruction. The first case was that of a girl, aged 10 years, who was admitted to the Aberdeen Royal Infirmary with an intussusception of six days' standing. As the obstruction was not complete and her symptoms were not urgent Dr. Milne resolved to watch the case. On the seventh day after admission the patient developed symptoms of acute obstruction. Laparotomy was performed and an intussusception of the triple or telescopic variety was discovered. The ileum was seen disappearing into the cæcum, carrying with it the appendix. As there were no adhesions, the susceptum was easily expressed from the ascending colon and a tight gangrenous intussusception of the ileum was discovered. This was resected. Upon the forty-fourth day after the operation the patient developed an empyema on the left side. This was treated by resection of a rib and drainage. The subsequent history of the case was good. The second case was that of a male, aged 48 years, who was suffering from symptoms of acute obstruction due to a malignant stricture of the descending colon. The condition of the patient was too bad to permit of resection and a short circuit of the transverse colon to the sigmoid flexure was therefore made by means of Murphy's button. The condition of the patient rapidly improved and on the thirty-sixth day the tumour with six inches of the descending colon was resected. This patient made an uninterrupted recovery. He has gained nearly three stones in weight and has been able to return to work. With the exception of a slight fæcal fistula his general health is excellent.—Professor D. W. Finlay contributed particulars of a case of Chronic Pleuritic Effusion which after two ordinary tappings, yielding respectively 66 and 47 ounces of serofibrinous fluid, was treated on four subsequent occasions after Sir James Barr's plan of paracentesis, a solution of adrenalin chloride varying in quantity from one to five drachms (strength 1 in 1000) being injected. The quantities of fluid removed on these four occasions were 47, 75, 70, and 70 ounces respectively. There was a distinct lengthening of the periods between the tappings after the use of the adrenalin, but the pleura had filled up again and there was thus no permanent improvement.—Mr. H. M. W. Gray agreed with Professor Finlay about the adrenalin treatment. He considered that the injection of air into the pleural sac tended to reduce adhesions and to favour expansion of the lung. He was in favour of repeated tappings in such chronic cases rather than resection of the ribs with the risk of empyema.—Dr. G. Rose in this connexion quoted long-standing cases of empyema where cure resulted only after resection of ribs.—Professor Finlay, in reply, described briefly two other cases which required frequent tapping. He was of opinion that in this case resection of the ribs might be tried. He would recommend a tolerably free opening which might subsequently be extended.—Dr. T. C. Mackenzie read a paper on the Recognition and Treatment of Incipient Mental Disease in General and Hospital Practice. He commented upon the importance of treating mental cases in their early and incipient stages. These cases were not provided for under the lunacy law and were as a rule unprovided with hospital treatment. He gave an analysis of the earliest signs and symptoms in cases of insanity recently admitted to the Aberdeen Royal Asylum. Of these, headache, sleeplessness, loss of appetite, general feeling of unwellness, constipation, previous mental attack, and influenza were the most important. In the early recognition of cases of insanity a concurrence of these signs with a history of hereditary predisposition to insanity was of great importance. Dr. Mackenzie then dealt with the recent correspondence in the *Scotsman* concerning "Wards for Incipient Mental Diseases in the Edinburgh Infirmary." Personally, he thought that such wards were very desirable. They had been worked with success in Glasgow and on the continent and he thought that wards of this character, under the charge of a specialist, should be provided in every teaching hospital. He described several cases which illustrated the necessity for hospital wards where acute and transitory cases of mental disorder could be treated without the patient requiring to be certified as insane, instancing such cases as delirium tremens, epileptic confusion and excitement, and some cases of puerperal fever.

MEDICO-LEGAL SOCIETY.—A meeting of this society was held on Feb. 11th, Sir William J. Collins, M.P., ex-President, being in the chair.—Dr. L. Freyberger read a paper entitled "An Analysis of 74 Cases of Sudden Death while under the Influence of Anæsthetics." The clinical facts relating to many of these cases, all of which occurred in one coroner's district in the last six years, were given. In each instance Dr. Freyberger had made a post-mortem examination and had given evidence before an inquest jury. In his opinion it was necessary to diagnose the possible presence of status

[1] Brit. Med. Jour., Nov. 9th, 1907.

lymphaticus, as such patients needed special care when being anæsthetised.—Dr. F. W. Hewitt regarded the whole question as most pressing, for many of the deaths just previously narrated were preventable. The older view, that a small number of deaths is inevitable, was incorrect. Anæsthetics were not dangerous drugs unless placed in incompetent hands. The facts of the case should be stated plainly. The conditions ceased to exist as dangers when experience had been profitably gained with the use of these drugs. In fatal cases the fault did not rest with the surgeon, the patient, the operation, or the drug. The principle to be followed was that the respiratory functions were affected: the anæsthetised patient might suffer from an intercurrent asphyxia, especially in cases in which the respiration was liable to be spasmodic. On the post-mortem table no evidence of this spasmodic condition might be manifest. Much greater and more special attention should be given to the practice of anæsthetics in medical schools. He doubted if sudden cardiac and circulatory failure was ever fatal in such circumstances. "Fatty heart" was now rarely offered as the cause of death; status lymphaticus might also before long cease to be suggested. The real cause of death was auto-asphyxiation which could be guarded against if very special care was taken by the anæsthetist.—Mr. R. Henslowe Wellington did not think that 74 cases was relatively a large number in six years' inquest practice, especially as several were merely coincidental with the anæsthetisation.—Dr. Leonard E. Hill affirmed that the danger lay in paralysis of the heart. The vagus nerve centre was rendered irritable by the drug and the nerve itself was excited; the failure of respiration was due to the great fall of the blood pressure owing to the gradual poisoning of the heart. The heart could not be revived after paralytic dilatation unless it was infused with normal blood. A mechanical contrivance must be invented whereby a safe dose of the drug could be given.—Mr. John Troutbeck explained how the cases had come under his notice as coroner for one-eighth of the metropolis. Few deaths under anæsthetics were reported by private medical practitioners, possibly because it was not generally known in the profession that all such cases must be considered by the inquest jury. The anæsthetist should be a person in authority and not a junior practitioner whose freedom was biassed by the expressions of opinion of a senior surgeon. Very seldom did the relatives complain in hospital cases. A pathologist should be instructed to investigate the case who was neither the anæsthetist nor the surgeon interested, although both the latter should be allowed to be present at the necropsy and to give evidence. He had not gained much help from the lists of questions which had been published from time to time as a guide in these cases. Each coroner after some experience learnt what questions it was most profitable to put.—As the discussion had aroused great interest it was decided, on the motion of Dr. F. J. Smith, seconded by Dr. F. S. Toogood, to adjourn the meeting until Tuesday, March 24th, at which session certain medico-legal aspects of the question will be discussed. Mr. Justice Walton, the President, will be in the chair.

NOTTINGHAM MEDICO-CHIRURGICAL SOCIETY.—A meeting of this society was held on Feb. 5th, Dr. L. W. Marshall, the President, being in the chair.—Mr. R. G. Hogarth showed a boy, aged seven years, the subject of Multiple Exostoses affecting the Ribs, Phalanges, Radius and Ulna at the Wrist, Tibia and Femur. A complete removal had been made of all present four years ago, but in view of their painlessness and rapid recurrence no further operation was now contemplated.—Dr. F. H. Jacob showed a breast-fed child, eight months old, who was a well-marked case of Urticaria Pigmentosa. The rash dated from birth and previously to vaccination.—Mr. W. Morley Willis and Dr. J. H. Thompson showed a girl, aged 15 years, in whose breast a painless, globular, vascular Tumour probably of sarcomatous nature had appeared a few weeks before. She had menstruated four times; a slight enlargement of an axillary gland could be made out and a somewhat cystic feel was given by the tumour in places.—The cases were discussed by the President, Mr. Willis, Mr. Hogarth, Dr. J. A. O. Briggs, Dr. Thompson, Dr. J. Watson, and others.—Dr. C. H. Cattle read a paper on Some Difficulties in the Diagnosis of Mediastinal Tumours. Practically these resolved themselves into the question as to aneurysm or tumour, the latter in the vast majority of cases being of a malignant nature. Referring to the case of a man, aged 58 years, who had been in hospital for three months under observation, it was remarked that many of the symptoms and signs usually associated with aneurysm might at times be due to tumour. Eventually, as the post-mortem specimen showed, the growth surrounded the heart and thoracic aorta, so as to exert pressure upon the left recurrent laryngeal nerve, the left bronchus, and the sympathetic nerves. There were also a systolic basal murmur, an accentuated second sound, and increased pulsation to the left of the sternum, all due to the growth enveloping the aorta and causing shrinkage and compression of the left lung. Whilst in hospital this patient gained steadily in weight. Another sign met with was compression of the left subclavian vein and enlarged superficial veins about the thorax and shoulder. This was distinctly in favour of tumour. A new growth surrounded, compressed, and invaded the veins, while an aneurysmal sac more frequently displaced them. On the other hand, alterations of the arterial circulation—e.g., in the radial pulse—were in favour of a diagnosis of aneurysm. A second case was related occurring in a man, aged 34 years, whose symptoms began with breathlessness and expectoration of blood-stained phlegm. The evening temperature varied between 102° and 104° F. and often remitted as much as 3° in the morning. Friction-sounds were heard near the left nipple and in the lower axillary region. When admitted he was pale and wasted, short of breath, and unable to get about. He was hoarse and the left vocal cord was paralysed. There was dulness at the left apex in front and at the base behind. The breath-sounds were weak over the left lung in general, but of tubular quality at the apex. Pain was practically absent, but there were attacks of spasmodic cough. The puzzling features of the case were the rapid wasting, marked adynamia, and the hectic temperature without much expectoration. After an illness lasting for about four months the patient died suddenly from a profuse hæmorrhage. The clinical symptoms were thought to have pointed to rapidly growing sarcoma of the lung. At the necropsy the right lung was found greatly distended and the left was collapsed. A small aneurysm had compressed the left bronchus close to the bifurcation of the trachea, into which it had ruptured. The left pleural cavity contained three-quarters of a pint of fluid and the visceral pleura was thickly coated with recent fibrin.

MANCHESTER MEDICAL SOCIETY.—A meeting of this society was held on Feb. 5th, Dr. A. T. Wilkinson, the President, being in the chair.—The President read a paper opening a discussion on Alcoholic Cirrhosis of the Liver. He urged that due recognition should be given to tympanites as a diagnostic sign of advanced disease and claimed that this condition was equal in significance to the classical signs of ascites, jaundice, hæmatemesis, and cerebral symptoms. A typical case was described in illustration of this thesis. A tympanites of three weeks' duration in a well-nourished man, aged 36 years, who felt in his usual health, was the sole prominent symptom. Alcoholic cirrhosis was diagnosed and the patient died nine days later from coma. The diagnosis was confirmed by necropsy. The President drew attention to the neglect of this symptom of tympanites by the text-books. In most works the matter was not mentioned; in others tympanites was referred to as a sign which might mask others, such as ascites. There was a failure to recognise tympanites as a prominent sign *per se*. The pathology of acute painless tympanites in alcoholic cirrhosis was then discussed and the condition was attributed to back pressure from the portal system whereby the delicate neuro-muscular apparatus of the intestine was thrown out of gear. In speaking of the treatment of advanced hepatic cirrhosis the time-honoured pill of mercury, squill, and digitalis, of each 1 grain, was advised as the most trustworthy diuretic. As regards the etiology of cirrhosis the President declared his belief in alcohol as the causative agent to be unshaken. It was the steady "sober" *drinkers*, not the habitually *drunken* who filled our inebriate homes, who were the victims of alcoholic cirrhosis. A brain sensitive to alcohol was actually a safeguard against alcoholic cirrhosis. Gastric catarrh did not, in his experience, bear any causative relation to cirrhosis. It was those who "stood alcohol well" who suffered from this hepatic change.—Dr. E. S. Reynolds agreed with the President as to the different susceptibility of the "drinker" as distinguished from the "drunkard" to alcoholic cirrhosis. He believed hepatic cirrhosis to be not uncommon in children, their livers being specially susceptible to alcohol. Splenic enlargement was inversely proportional to the amount of ascites. In ascites he believed tapping should be persevered with;

this manœuvre was sometimes successful if at the same time alcohol was prohibited.—Mr. M. J. Chevers mentioned a case of "hob-nail liver" in which he had reason to believe the patient had always been a teetotaler.—Dr. F. Craven Moore laid stress on the presence of dilated abdominal veins as a diagnostic feature. He noted the change of form which post-mortem examination in recent years revealed in cirrhotic livers. The old "hob-nailed" liver was now rarely seen, its place being taken by livers of normal size with a granular surface.—Dr. R. W. Marsden thought that this change of type might be due to the change of habits in present-day drinkers.

Reviews and Notices of Books.

Text-book of Comparative General Pathology for Practitioners and Students of Veterinary Medicine. By Professor TH. KITT of Munich. Authorised translation by Dr. WILLIAM W. CADBURY, Assistant Demonstrator of Pathology in the University of Pennsylvania. Edited with notes and additional illustrations by Dr. ALLEN J. SMITH, Professor of Pathology in the University of Pennsylvania. With four coloured plates and 131 illustrations. London: Baillière, Tindall, and Cox. 1906. Pp. 471. Price 25*s*.

IT is a singular fact that great as the contributions afforded to our knowledge of the nature of pathological processes by the study of the natural or experimentally produced diseased conditions of animals have been, most text-books or treatises on general pathology have been written from the standpoint of the practitioner of human medicine and illustrated by reference to the lesions found in the human subject. The veterinary student and practitioner have thus been to some extent at a disadvantage, for although the essentials of pathological processes are closely similar in most mammalia the morbid anatomy and histology of the resulting lesions frequently differ in different animals in very important points. Professor Kitt, recognising that the education of veterinary students, to be rational and scientific, entails as a necessity a study of comparative pathology, set himself the task of writing a text-book on this subject with illustrations of the various morbid processes from the domesticated animals. We may at the outset say that he has succeeded in producing a most valuable book and one which will well repay study from the standpoint of human pathology. A knowledge of comparative pathology is of great value in the elucidation of some of the problems of disease in man, and in view of the great advances which the study of pathology is daily making, and of the valuable additions which it promises to afford to our therapeutic measures, is likely to become of increasing importance. Professor Kitt writes clearly and well and the translator has done full justice to his style, so that the book hardly conveys the impression of having been written in another language. The accounts given of pathological processes and conditions are concise without being sketchy and their results are carefully classified.

A short history of pathology with especial reference to veterinary pathology is given and it is pointed out that research in comparative pathology was completely dormant from the fourth to the eighteenth century. This is followed by a section entitled "Predisposition towards Disease," in which the recent studies on the nature of immunity are summarised and an intelligible and intelligent account of Ehrlich's theories is given. The causes of disease are categorically studied, among which the bacterial agents and the animal parasites are considered in some detail. Among other matters worthy of special mention is the section given up to the description of circulatory disturbances. The accounts of hæmorrhage, dropsy, thrombosis, and embolism are as good as any that we have read. The note contributed by the editor on the conditions leading to the production of anæmic and hæmorrhagic infarcts is especially worthy of notice, for it is much more intelligible than the accounts usually found in text-books of pathology. The retrograde changes and necrotic processes, including the degenerations and infiltrations, are also dealt with at some length, while the descriptions given of these processes and the discussion of their nature are thoroughly commendable.

Perhaps the best criterion for forming an opinion on a text-book of pathology is the account given of the process of inflammation and in this book the account leaves nothing to be desired. It is well written and clearly expressed and the various factors are separately studied, while the results and varieties of the processes are each considered in detail. Like most pathologists, Professor Kitt has his own definition of inflammation and it is a good one. Regenerative and reparative processes are described in detail and an interesting section on tumours follows. Some of the theories of tumour formation are given and luminously criticised.

The book is thoroughly well illustrated, the editorial notes appended are in all cases explanatory of the text, and they are in many instances valuable additions. There are but few misprints, though we notice on p. 259 "ecshars" for "eschars." We can cordially recommend this book to anyone who wishes to gain a clear knowledge of the principles of general pathology from a comparative point of view.

Diseases of the Ear. By HUNTER F. TOD, M.D. Cantab., F.R.C.S. Eng., Aural Surgeon to the London Hospital, &c. Oxford University Press: Henry Frowde. London: Hodder and Stoughton. 1907. Pp. 317. 15 figures and 18 plates. Price 5*s*.

THE first two chapters of this practical book are devoted to the diseases of the external ear and contain a short and useful account of the various diseases and malformations of the part, with their treatment. It is interesting to note here that the view is expressed that the old method of operating by means of a burr for the removal of exostoses through the canal is falling into disuse as being unsurgical as well as dangerous. Cutting away the growth through the meatus by means of a gouge is one of the surgical procedures described. The third chapter is devoted to diseases of the tympanic membrane. Acute myringitis, apart from a traumatic lesion, is described, and, as Mr. Hunter Tod remarks, it is met with clinically, though we cannot say that we consider this sufficient argument for considering myringitis as a separate disease. The fourth chapter deals with diseases of the middle ear and, in common with the preceding ones, is prefaced by a short description of the anatomy of the part. In this chapter the tests for hearing are dealt with. There is a fairly full description of Rinné's test, with some directions as to its application, and after the tests have been discussed and their employment indicated a brief summary is given, and it is stated that in middle-ear deafness "Weber is referred to the affected side, bone conduction is increased, Rinné is negative, &c., while in internal ear deafness bone conduction is diminished," although this does not complete the summary. We think that such a statement should not be made without very considerable qualification. In describing the methods of inflation of the middle ear a very excellent series of reasons is given to show which method is preferable and in what cases. On p. 89, in discussing the time at which inflation of the middle ear may be performed, an unfortunate printer's error causes it to read "84" instead of 48 hours. Chapter V. deals with chronic middle-ear catarrh and contains a very admirable and short account of the disease. In discussing the treatment of it a wise statement is made,

that bougies should only be employed by experts. The chapter on acute inflammation of the middle ear contains quite a full account of the subject. Chronic middle-ear suppuration, together with its complications and sequelæ, is very fully described. The remaining chapters deal with diseases of the internal ear, specific diseases of the ear, deaf-mutism, and allied diseases of the nose and naso-pharynx, and are quite up to the standard of the rest of the book.

We consider that this work is one well adapted to supply the needs of the student and as a handbook of reference for the general practitioner.

LIBRARY TABLE.

Text-book of Organic Chemistry for Medical Students. By Dr. G. von BUNGE, Professor of Physiological Chemistry in the University of Basle. Translated, with Additions, by R. H. ADERS PLIMMER, D.Sc. Lond. London: Longmans, Green, and Co. 1907. Pp. 260. Price 6*s.* net.—Professor Bunge's well-known faculty of presenting the principles and facts of chemistry in general, and of organic chemistry in particular, in a clear light has always gained for him a large circle of readers. Moreover, his experience in his position of professor of physiological chemistry in the University of Basle has brought him into contact with the needs of medical students in regard to that knowledge which is most useful to them in connexion with their particular study. There can be no doubt, as he says, that the domain of organic chemistry has been widened to such an enormous extent by the increasing labours of the last decades that those who devote their life to the study of organic chemistry can no longer be masters of the whole subject. If that be so it is obvious that the position of the medical student in regard to making a sound acquaintance with the facts and principles of organic chemistry grows increasingly difficult year by year. Yet he is necessarily compelled to acquire some knowledge, as otherwise his study of physiology, pathology, and so forth will be beset with obstacles. The fact is that he has to pick out for himself those portions of the science which bear more intimately on his medical studies. The purpose of this volume, in short, is to save him the labour of consulting voluminous works on the subject and to bring him into contact with just those points which concern him most as a student of medicine. In these days of rapid advances this crystallising process is obviously difficult, but in the hands of such an experienced teacher as Professor Bunge a groundwork at any rate is laid which is sufficient for the purpose in view, while of course the student if he should demand more can afterwards devote himself to more comprehensive works on the subject. We can congratulate the student who starts the strictly medical side of his studies with such an excellent knowledge of principles and facts as is outlined in this readable treatise. He further will appreciate the fact that the translator has made several additions which were introduced to meet the extra requirements of the English curriculum as compared with the German. As a companion to physiological and pathological study the book will be found most useful.

JOURNALS AND MAGAZINES.

Journal of Physiology. Edited by J. N. LANGLEY, Sc.D., F.R.S. Vol. XXXVI., Nos. 4 and 5. Dec. 31st, 1907. London: C. F. Clay. Price 10*s.*—The following are the contents of the two numbers of this journal. 1. F. S. Locke and O. Rosenheim: Contributions to the Physiology of the Isolated Heart: the Consumption of Dextrose by Mammalian Cardiac Muscle. 2. W. M. Bayliss: Researches on the Nature of Enzyme Action on the Causes of the Rise in Electrical Conductivity under the Action of Trypsin. 3. Lucas Keith: On the Rate of Variation of the Exciting Current as a Factor in Electric Excitation. 4. J. Barcroft and G. R. Mines: The Effect of Hirudin upon the Gases in Arterial Blood. 5. A. E. Boycott and G. C. C. Damant: A Note on the Quantities of Marsh Gas, Hydrogen, and Carbon Dioxide produced in the Alimentary Canal of Goats. 6. John Mellanby: The Precipitation of the Proteins of Horse Serum. 7. Keith Lucas and G. R. Mines: Temperature and Excitability. 8. J. N. Langley: On the Contraction of Muscle Chiefly in Relation to the Presence of Receptive Substances. Part 1.

The Quarterly Journal of Microscopical Science. Edited by Sir E. RAY LANKESTER, K.C.B., F.R.S., with the coöperation of ADAM SEDGWICK, M.A., F.R.S., SYDNEY J. HICKSON, M.A., F.R.S., and E. A. MINCHIN, M.A. With lithographic plates and text figures. New Series, No. 205. Vol. LII., Part 1. London: J. and A. Churchill. Price 10*s.* net.—The contents of this part of the journal are: 1. Spirochæta (Trypanosoma) Balbiani (Certes) and Spirochæta Anodontæ (Keysselitz); their Movements, Structure, and Affinities, by H. B. Fantham, B.Sc. Lond., Derby Research Scholar, University College, London, with three plates and 11 text figures. 2. The Structure and Life-History of Copromonas Subtilis, *nov. gen. et nov. spec.*; a contribution to our knowledge of the Flagellata, by C. Clifford Dobell, B.A., Scholar of Trinity College, Cambridge, with two plates and three text figures. 3. Notes on some Parasitic Protists, by C. Clifford Dobell, with a plate. 4. Studies in Spicule Formation: VIII., Some Observations on the Scleroblastic Development of Hexaclinellid and other Siliceous Sponge Spicules, by W. Woodland, the Zoological Laboratory, King's College, London, with a plate. Mr. Fantham's memoir on the spirochæta Balbiani and spirochæta anodontæ is of great interest. It contains a good historical introduction. The specimens were obtained from English oysters, in which they occupy in particular the crystalline style and adjoining parts, few being found in the posterior part of the intestine or in the rectum. A ½ per cent. solution of methylene blue was found to be a useful *intra vitam* stain. The gut contents were fixed as quickly as possible and while still wet with osmic vapour. Of the various stains tried on fixed material the most successful results were obtained with alcoholic gentian violet, iron-alum hæmatoxylin, and other hæmatoxylin solutions. The length of the spirochæta Balbiani is from 150μ to 50μ and it is 3μ to 2μ in breadth. It is composed of homogeneous protoplasm and a nucleoid composed of about 60 rodlets of chromatin disposed transversely along the body at nearly equal distances. Attached to the body of the animal is an organella or spirally wound membrane, which is longitudinally striated and executes undulating movements with great speed. The movement of the organism as a whole is in jerks and partly results from a spiral thrusting motion due to the membrane and partly to an undulatory flexion of the body due to contractions of myonema fibrils of the periplast. Various forms of movement are described. The animals live by endosmosis. A very carefully drawn up account of the changes observed in the nucleus in division is given. The drawings which accompany the memoir are very interesting and show how much may be learned of the structure of extremely minute organisms. Mr. Dobell's article on Copromonas Subtilis is also full of interest and is well illustrated.

Journal of Anatomy and Physiology. Conducted by Sir WM. TURNER, K.C.B., ALEX. MACALISTER, D. J. CUNNINGHAM, ARTHUR THOMSON, and ARTHUR KEITH. Vol. XLII., Third Series. Vol. III., Part 2. London: Charles Griffin and Co. January, 1908.—It was intended that this part should be the first of a journal of physiology published separately from a journal of anatomy but it has been found to be impracticable to break up the well-known *Journal of Anatomy*

and Physiology into these two divisions, and hence that journal will continue to be issued as heretofore and the present part constitutes the second part of the forty-second volume. The contents of this part are: 1. The Comparative Anatomy, Gross and Minute, of the Thyroid and Parathyroid Glands in Mammals and Birds, by David Forsyth, M.D. Lond. In this research the first-mentioned glands obtained by careful dissection from 77 animals were submitted to microscopical inspection. The thyroid gland was found to be invariably present in mammals. Parathyroids are found in most, but not in all, members of the series. When present their total number is two, three, or four. 2. A note on the Development of the Septum Transversum and the Liver, by Peter Thompson, M.D. Vict. 3. The Brains of Aboriginal Natives of Australia in the Anatomy School, Cambridge University, by W. H. Duckworth, M.D., Part II., with 13 figures in the text, showing the sulci in different brains. 4. Studies in the Anatomy of the Pelvis, with special reference to the Fasciæ and Visceral Supports, by G. Elliot Smith, M.D., F.R.S. These studies are drawn from the examination of 20 adult subjects and a series of fœtuses and children, with many illustrations. The author accords high praise to Delbet's, Pasteau's, and Rieffel's contributions on this subject to the second edition of Poirier and Charpy's treatise on human anatomy. 5. An Unusual Duodenal Diverticulum, by Professor C. M. Jackson, M.S., M.D. 6. A case of Accessory Lobe of the Right Lung, by G. C. E. Simpson, M.B., B.Sc. 7. Further Observations on the Development of the Teeth of the Australian Aboriginal, by W. Ramsay Smith, M.D. Edin. 8. Note on a Tendon found in Association with the Insertion of the Peroneus Longus and Origin of the First Dorsal Interosseous Muscles, by Lieutenant-Colonel J. C. Lamont, I.M.S.

Revue de Psychiatrie, Nos. 9, 10, and 11, 1907.—The first of these numbers (No. 9) contains a report of the Congress of Alienists and Neurologists of France and the Latin Countries held at Geneva and Lausanne in August of last year. Dr. M. G. Ballet was the *rapporteur* on the subject of medico-legal evidence and the question of responsibility, and advances the thesis that the medical witness should confine himself solely to the diagnosis of disease and should not commit himself to the extent of the responsibility of the person on trial. In the subsequent discussion Dr. Grasset said that if responsibility was a function of the mind it might, in disease, be diminished or abolished and that the medical witness was competent to decide on the extent of the enfeeblement of that function. In a discussion on the Periodic Psychoses Dr. Régis avowed that he regarded the conception of maniaco-depressive insanity as subversive of the well-established classifications in so far as it suppressed the entities of idiopathic mania and melancholia. To justify the exclusion of these, the partisans of the maniaco-depressive theory find it necessary to sustain the proposition that cases of mania and melancholia always relapse, but this, according to Dr. Régis, is a simple affirmation which has nothing to support it. Dr. Ballet denied the existence of the simple non-relapsing forms but suggested the terms "excito-depressive" or "maniaco-melancholic" as being more appropriate than the present term. Dr. Schnyder, *rapporteur* on hysteria, desired to refuse to hysteria the characters of a clinical entity and to define it as a psychic modification in which there are an exaggeration and perversion of physical and psycho-physical reactions.—No. 10 contains an interesting article by M. Lucien Picqué on Surgical Psychotherapy. The author divides the more severe psychoses which are liable to complicate surgery into those that are primary and undergo exacerbations with the occurrence of some bodily injury and those that are secondary to trauma either of some part of the nervous system or of some other part of the body. He indicates the importance of the part that psycho-therapeutics may play in the treatment of such psychoses and of the various forms of hypochondriasis that are so frequently met with in surgical practice. This number also contains an account of the proceedings of the Amsterdam Congress.—In No. 11 Dr. Damaye gives accounts of certain cases of Stupor and Mental Confusion in which the iodides appear to have been of therapeutic value. He suggests as a possible explanation of the benefits which appear to be derived from their administration that the mononuclear leucocytosis, which is at least sometimes coincidental with the taking of these salts, acts as a means of defence on the part of the organism against the toxins in the circulation.

The Liverpool Medico-Chirurgical Journal.—The January issue of this journal contains several papers of more than ordinary interest. Dr. Andrew Cassels Brown contributes an admirable account of the glimpses of medical matters at the time of the Wars of the Roses shown in the "Paston Letters." We commend it and the documents upon which it is founded to the attention of all medical antiquarians. Dr. Charles J. Macalister writes on the Personal Factor in Diet and points out that, although the physiologists may draw up ideal diet tables for the average man, actual individuals differ widely in their needs and idiosyncrasies as to food. On this ground are to be explained the theories set forth as to the advisability of mankind living on nuts, fruits, and so forth, which may suit some peculiar people. In the Surgical Section is a valuable article by Mr. F. T. Paul on his experience in abdominal surgery. The continuation of Mr. William Alexander's reports on Epilepsy presents some novel views on the treatment of this malady, and some interesting cases of disease of the gall-bladder are recorded by Mr. G. Reinhardt Anderson.

The Dublin Journal of Medical Science.—In the January number appears a paper by Sir John W. Moore, entitled "Diphtheritic Fever," in which are reported the notes of a series of cases of anomalous diphtherial infection without formation of false membrane. In most of the cases there was coryza with fever and the appearance of a rash, giving rise to a very puzzling clinical picture. Bacteriological examination proved the presence of somewhat attenuated Klebs-Löffler bacilli. Dr. Alfred de Roulet pleads for the treatment of many gynæcological conditions without recourse to operative measures.

The Birmingham Medical Review.—Two papers on Prevention of Disease appear in the December number of this journal, the first by Mr. J. Jameson Evans on Prophylaxis in Ophthalmology, which deals with a large number of different conditions, toxic and occupational, as well as infective; and the second, by Dr. John Robertson, on Prevention of Infective Disease. The latter writer notes the failure to prevent the occurrence of the commoner infections—measles, scarlet fever, and whooping-cough—due to the difficulty of recognising them at their very onset. Dr. James W. Russell records some cases of cerebral hæmorrhage occurring in connexion with acute endocarditis.

Guy's Hospital Gazette.—The issue of this journal of Jan. 25th contains some remarks made by Mr. R. Clement Lucas on Inherited Syphilis, in opening a discussion on this condition at a meeting of the Society for the Study of Disease in Children. Dr. H. C. Mann's observations on Arterial Blood Pressure in Health and Disease are continued, the present instalment being devoted to diseases of the heart.

The London Hospital Gazette.—The January number opens with a paper on Lupus Vulgaris of Mucous Membranes by Mr. H. Emlyn Jones, with some illustrations of the condition. Some Hints on Extraction of the Teeth are given by Mr. Frank M. Farmer. The Clinical Supplement is devoted to an article on Massage and Exercises in the treatment of surgical cases, and a short note signed "A. K." calls attention to a recently issued book by Mr. C. E. Walker on the gametoid

phases of cancer cells which is commended to the perusal of all who are interested in the study of malignant growths.

Annals of Otology, Rhinology, and Laryngology, September, 1907.—This number contains ten articles, either original communications or papers which have been read at meetings of societies. The first is by Dr. C. R. Holmes, on the Etiology of Erysipelas and its Relation to the Nasal Cavities, and Destructive Effects upon the Eye. It is a long article of nearly 100 pages and is an interesting *résumé* of the subject. There are three papers on secondary disease of the labyrinth, and several others.

Journal of Laryngology, Rhinology, and Otology. December, 1907.—This number contains two original articles, the first on Tracheo-Bronchoscopy, by Dr. Chevalier Jackson of Pittsburg, and the second, part of an article by Dr. H. M. Fish of Chicago, on a study of 36 consecutive cases of Optic Neuritis, with Nasal Accessory Sinus Disease present in 26.

New Inventions.

ABDOMINAL WOUND SUTURE AND RETRACTOR FORCEPS.

THESE consist of a pair of forceps as seen in the illustration. Two pairs are used, for the right and left sides respectively. They have two flat blades, the lower being the smaller, set on a curved shoulder with long handles and a rack. The blades are tempered so that they meet at the points first and by means of the rack any pressure desirable may be obtained. They are designed for use in the following way. The abdominal wound having been made and the peritoneum opened to the desired extent, the lower blade, or smaller of the right forceps, is introduced and placed parallel to the incision, half an inch from the cut edge on the peritoneal surface; the forceps are then closed and the upper blade presses on the skin parallel to the incision and half an inch removed from it; a firm grasp is thus taken of the one side of the incision. The left forceps is then similarly introduced and fastened. It is then easy for an assistant standing well towards the thighs of the patient to rotate each handle onward, that is to say away from the wound, and thereby to evert the edges of the abdominal wound, at the same time retracting it. If it be thought advisable to protect the edge of the wound in the abdominal wall, as in dealing with some focus of septic matter within the abdomen, this can be accomplished by placing a piece of sterile gauze round the edge of the wound before applying the forceps, when they will hold it firmly in position during any manipulation within. When the wound has to be closed layer to layer, the assistant by a little pressure can approximate the edges of the wound with the cut surfaces everted, so that it is easy to pass a continuous suture along the cut surfaces of the peritoneum and another along aponeurosis or muscle, leaving the last stitch slack until the forceps are released and the lower smaller blades withdrawn, when the stitches may be drawn taut and tied together. This materially facilitates the closing in layers of the abdominal wound and thereby saves time. The forceps could also be used for bowel clamps and would be useful in enteranastomosis.

These forceps have been made for me by Messrs. Reynolds and Branson, Limited, of Leeds.

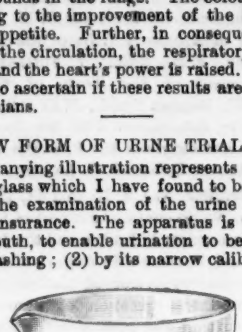
B. MAYHEW BONE, M.B., C.M. Edin., F.R.C.S. Edin.
Lancaster.

THE MECHANICAL TREATMENT OF PULMONARY TUBERCULOSIS.

WE have received from the Roborat Company a specimen of Kuhn's Suction Mask for the treatment of pulmonary tuberculosis according to Professor Bier's treatment by passive hyperæmia. The apparatus consists of a light celluloid mask fitting over the mouth and nose, divided by a cross partition into two chambers, for mouth and nose respectively. In both chambers free expiration is permitted by means of valves, while inspiration can occur only through an adjustable slit in the portion allotted to the nose. The margins of the mask are well padded by means of a rubber air tube which causes the minimum of pressure, and the natural nasal inspiration, by means of the slit just referred to, can be impeded in a graduated manner for the desired length of time without discomfort to the patient. Untoward consequences are said not to occur. On placing the mask over the mouth and nose with the slit only slightly open a distinct impediment to free inspiration is experienced. In this manner a certain amount of passive hyperæmia of the lungs is induced; the circulation of the lymph stream, however, is maintained. This method of treatment is stated to have been tried by Professor von Leyden in the medical clinic of the Charité at Berlin with encouraging results. The following effects have been claimed by the use of the mask: improvement of respiration and diminution of dyspnœa; considerable widening of the thorax, reduction of the frequency of respiration, cessation of cough, and disappearance of expectoration, bacilli, and adventitious sounds in the lungs. The colour of the patient improves owing to the improvement of the blood and there is increased appetite. Further, in consequence of the improvement in the circulation, the respiratory musculature is strengthened and the heart's power is raised. We shall watch with interest to ascertain if these results are corroborated by English physicians.

A NEW FORM OF URINE TRIAL GLASS.

THE accompanying illustration represents a modified form of urine trial glass which I have found to be a decided convenience in the examination of the urine of patients and proposers for insurance. The apparatus is well adapted (1) by its wide mouth, to enable urination to be performed into it without splashing; (2) by its narrow calibre, to allow the specific gravity of a minimum amount of urine to be tested; and (3) by the bottom being tapered conically, to facilitate the collection of the sediment. These points have been effectively carried out by the manufacturers, Messrs. Mayer and Meltzer, 71, Great Portland-street, London, W.



Mountpottinger, Belfast. R. M. FRASER, B.A., M.B.R.U.I.

THE Society of Tropical Pathology of Paris has elected Dr. David N. Nabarro a corresponding member of the society.

THE LANCET.

LONDON: SATURDAY, FEBRUARY 22, 1908.

The Sanitary Administration in India.

WE have been long accustomed to keep our readers informed of the progress of sanitary affairs in India and of the chief events in connexion with the work of the Indian Medical Service. The problems resulting from the consideration of these matters have grown greatly in importance during recent years, with the result that lately official opinion in India, and even to some extent in our own country, has been compelled to recognise their gravity, and indeed to consider them as amongst the most vital concerns of the administration of our great Eastern dependency. Truly vital are they in this, that on them hangs the life or death of hundreds of thousands of our fellow beings. Signs are not wanting that this has at last been driven home to the Indian bureaucracy and that it is setting itself seriously to work to promote the sanitary welfare of its country, and especially to combat that awful scourge which for over ten years has raged amongst the people whose destinies are in its keeping. In earnest of this we publish on another page a letter addressed some two months ago by the Secretary to the Home Department of the Government of India to all local governments and administrations under its control, stating its views on the subject of Sanitary Reform in India and asking for their advice and co-operation in the matter. Without considering them in detail at present we may say that the proposed plan seems to us to be laid on a broad and safe basis, but many important decisions must be come to before the best course is made manifest through a sea of conflicting perplexities. In calling attention to this new activity of the Indian Government it must not be considered that we think the sanitary administration in India has been neglected by the officers of the Indian Medical Service who are charged with its actual performance, for only recently we published a refutation of a shameless and anonymous calumny aimed against its members.[1] That service has a record for steady continuous hard work, conspicuous even in India, which has been served by its military and civil officials, working in many spheres and often under most arduous and disheartening conditions, with a loyal devotion of which any country might well be proud. But men, though they be as giants, cannot work miracles, and the task which to-day confronts the sanitary service in India is one with which its administration can hardly cope under present conditions. In support of this opinion the terrible plague problem comes at once to mind. We have dwelt on this matter often and it will be our duty to dwell on it, even to weariness, until by some means its ravages have been stayed. The last available reports received in this country state that from the beginning of last year to the end of October more than 1,100,000 deaths had occurred from plague in India. Plague has not left the country since its outbreak in 1896, and since that year has claimed at least 5,500,000 victims, the lowest yearly mortality during this century having been 274,000 in 1901. Chiefly on this account, but partly from other causes, the death-rate of all India has greatly increased since that year. To face this task we have urged that a special Plague Service is essential, for it is not within the power of the Indian Medical Service to stem that tide without well-organised assistance, however courageously it sets about doing so.

There are other factors which make the sanitary administration of India a task of increasing difficulty. Our methods of rule, including the very existence of that administration, have greatly increased the population with whose needs it must cope. In former days, moreover, we had to deal with enormous masses of people unversed in Western knowledge and ruled by feudal overlords whose education differed widely from our own. Now we have raised up a middle class of young Indians, highly trained in many directions, with a keen appreciation of modern scientific methods and with a growing influence on popular opinion in their country; these men cannot be dictated to on matters of science as though they were an ignorant peasantry, and though their support may be of the greatest value in the sanitary reformation of India, yet they must be honestly convinced of the soundness of our methods and not coerced into accepting them. As will be seen in the circular letter of the Indian Government, it proposes to open up the Sanitary Service as a useful and suitable career for this growing class. Whatever reforms are proposed in the direction of increasing the service, it must be remembered that before the country can derive the fullest advantage from its medical service there are certain grievances to the removal of which its officers are justly entitled and to which we have from time to time called attention, such as the period of their service, the multiplicity of their duties, and the limitation of the emoluments which they may derive from civil practice.

Being thus fully alive to the growing importance of this complex problem we intend to devote an increased amount of space to reports of Indian medical and sanitary affairs in future. We are enabled to do this largely by the courtesy of the governors, lieutenant-governors, and commissioners of the various provinces and the principals of the medical schools of the Indian Empire, who have consented to forward regularly to us the published reports dealing with these matters. Out of a very large pile of figures and facts we hope to present our readers with a digest which will fairly summarise the position of the many matters under the control of the Indian Medical Service, and the first of these articles is published in this issue. Amongst the subjects with which we shall deal will be the administration of hospitals, lunatic asylums, and gaols, the work of medical colleges, the progress of research in bacteriological and pathological laboratories, general sanitary administration, and the measures employed to suppress plague. We hope that

[1] THE LANCET, Jan. 4th, 1908, p. 37.

many of our readers will follow these articles, even though they have no direct interest in India, for we hold that medical men as a body can exercise a notable influence on public opinion in subjects of which they have special knowledge. A strong body of public influence may materially hasten the time when the Medical Service in India shall be reorganised on lines sufficient for the demands made on it by present conditions.

New Zealand and Public Health.

WE have received a copy of the report of the Department of Public Health for the colony of New Zealand for the year 1906–07, dated June 1st, 1907, and, with its appendices, covering 112 folio pages. A considerable amount of this space, of course, is occupied by matter of a kind undistinguishable from that with which we are familiar at home, such as the statistics of vaccination and other similar matters; but even here attention cannot fail to be arrested by a return which shows the infantile death-rate of the colony to be under 70 per 1000. In this respect it is not uninteresting to note that illegitimate children become legitimatised by the subsequent marriage of the parents, or in any case in which a man marrying a woman with illegitimate children registers them after the marriage as his own. An Act to this effect was carried in 1894 and has been taken advantage of in the case of 849 children; while two years later an Act was passed for the better protection of infant life, by which it was enacted that no one may take charge, for payment, of an infant to maintain or to nurse for more than three days without holding a licence as an "infant's home keeper." The house of every such person must be registered as an infants' home, and all these homes are periodically inspected by the police. The Police Commissioner reports that for the year ending March 31st, 1906, there were 557 of such registered homes in the colony, containing 862 infants, against 528 homes and 728 infants in the year preceding. 21 deaths occurred in the homes during the year and four licensees, three of whom were convicted, were prosecuted for breaches of the Act; but no licence was cancelled and no neglect on the part of licensees was disclosed at inquests. It is difficult, of course, and perhaps impossible, to institute any fair comparison in such matters between the colony and the mother country; but it must at least be admitted that the conditions of infant life there must in many respects be far better than those which exist at home. To take one of these respects only, we read that "there has been no epidemic of any serious nature during the past year." Measles and scarlet fever have occurred in certain districts, but the cases have been limited in number and the deaths few. Vaccination is being largely neglected, over 81 per cent. of the children born during the year under consideration being still unprotected; but the neglect is attributed chiefly to an indifference arising from ignorance of the nature of small-pox. When that disease appeared in Christchurch in 1904 11,120 people were voluntarily vaccinated in three months; and the chief health officer, DR. J. M. MASON, seems to be of opinion that any manifest danger of a small-pox outbreak would again occasion a rush for protection. In the meanwhile, one of the most pressing dangers to public health appears to arise from the prevalence of hydatids, and special injunctions concerning the precautions to be taken in keeping and feeding dogs occupy a prominent place in the report.

The most remarkable feature of the document, however, and one which might profitably receive careful consideration from the legislatures of older countries, is the history of a campaign against certain forms of dishonesty and of quackery which has been set on foot by the agency of what is described as a "modest and unassuming amendment" to the Postal Act. By this amendment the Postmaster-General of the colony is empowered to issue under his hand an order forbidding the registration, forwarding, or delivery of any letter or postal packet to any specified address, or the issue of any money order to the same address, he having reason to believe that the correspondence thus estopped is part of a system of betting, gambling, professed prediction of future events, of any "fraudulent, obscene, immoral, or unlawful business or undertaking," or of any "advertising in direct or indirect terms the treatment of diseases of the sexual organs." In commenting upon this amendment of the law and upon its effects the chief health officer points out that "most of the vultures who fattened on the fears of the misguided youth or the simplicity of the elderly man about town have, so to speak, been warned off the course." They have, he says, used in defence such weapons as might have been expected. Newspapers have been threatened with loss of revenue, the cry of medical oppression has been raised, and some have attempted bribery, but, in spite of all, he is pleased to place on record that every paper of standing in the colony has not only gladly agreed to accept the Postmaster-General's ruling but has endeavoured in every possible way to throw out advertisements which were demonstrated to be proclaiming wares or services which were not in the best interests of the State. "I have no hesitation," he continues, "in saying that in no part of the world could a cleaner advertisement page be found than in New Zealand." Many of the operators have left the colony and the reasons assigned for their departure are curious and varied. One, because his New Zealand clients have become numerous, has determined to transfer his operations to Sydney, and on account of the greatness of his reputation he asks his New Zealand patients to send their letters to another address and inscribed to another name. "No one," writes the chief health officer, "is foolish enough to believe that quackery and fraud can be stopped entirely, but the inclusion of this section of the Post Office Act Amendment amongst our laws has satisfied me that much can be done."

The Supply of Pure Milk to Hospitals.

THE question of the supply of pure milk to the London hospitals has during the last year been engaging very seriously the attention of the bodies responsible for their administration. Our readers may remember a report which appeared in our issue of May 11th, 1907, p. 1311, of a conference of the United Children's Hospitals of London which dealt with this important matter, and we have now received from the Central Hospital Council for London the

report of a committee appointed by the Council in last July to consider a reference in the following terms—namely, "Whether the London hospitals should be advised to take joint action with a view to insuring the purity of their milk-supply." The committee has had the advantage of very expert evidence in its deliberations, as it consulted several large distributors of milk on the one hand and medical officers of health and analysts on the other. It finds that the practice at present prevailing in 12 hospitals is to require from the milk contractors certain percentages of total solids and fat in the milk supplied; one hospital has no form of milk tender at all, whilst eight, in addition to the percentages, require the notification of the farms of supply and also the periodical certification of the health of the cows from which their milk is derived. The committee recommends the constituent hospitals of the council, which represents all the larger London hospitals, to require their respective contractors to agree to the following conditions which it is advised are fair and reasonable :—

1. That the milk shall be pure, genuine, with all its cream as yielded by the cow, absolutely free from any and every kind of adulteration (including preservatives), and shall be of such quality as will, between the months of August and January, both inclusive, produce at least 3·5 per cent. of butter fat, and for the remainder of the year 3·25 per cent. of butter fat.
2. That the milk shall be supplied from a farm or farms whose name or names and locality are to be notified by the contractor to the hospital.
3. That it shall be permissible for an authorised representative of the hospital to visit and inspect such farm or farms and the herds there at any reasonable times.
4. That the cows supplying the milk shall be in a good state of health and that the contractor shall give the hospital a certificate by a veterinary surgeon to that effect in the annexed form* without cost to the hospital in the first instance, and shall give subsequent certificates whenever required by the hospital at the hospital's expense.
5. That the milk shall be strained and cooled to the temperature of cold water, not exceeding 60 degrees, at the farm, and there canned and sealed with a die to be supplied by the hospital, and that all cans shall be dust and rain-proof.
6. That the contractors shall guarantee the cleanliness of the milking operation and of the men's hands and of all receptacles into which the milk is put, all of which receptacles shall be properly cleansed with a solution of boiling water and soda.
7. That the cans shall not be opened in transit except at the London railway station by the public sanitary inspectors and if so opened shall be immediately re-sealed for delivery to the hospital and shall in every case be delivered direct from the London railway station to the hospital.
8. That the milk shall not be pasteurised or treated otherwise than as mentioned in Clause 5 without the written sanction of the hospital authorities.

The percentage of butter fat insisted on is rather above the average amount found in London milk and even above that yielded by many cows, but it must be remembered that for most of the children in the hospitals and for many of the acutely ill, especially in such cases as those affected with enteric fever, milk forms the staple of the diet, and therefore milk of quality above the average is not unreasonable. The last section of the report recommends certain precautions outside the contracts to be observed by the hospitals, the chief of which is the securing of the coöperation of the medical officers of health of the districts in which the farms are situated in supplying reports of their sanitation and the freedom from infectious disease of their employees. It advises at least one weekly analysis of the milk, made on irregular days, and suggests the joint employment by a group of hospitals of an inspector to visit the farms. It is further suggested that the contracts should be framed with a summer and winter price for the milk instead of with an average all the year round price. The committee is of opinion that in view of the serious interests involved the risk of a slight increase in price which these more strict conditions will entail may be justifiably incurred, and with this opinion we are in complete concord. The committee has been well advised to make its conditions such that any well-equipped farm can reasonably comply with them. The aim in the imposing of the above conditions has been to insure not merely the delivery of milk of a high quality as regards the percentage of its important constituents but also the absence of harmful substances, whether accidentally present or added with a view of preventing decomposition. It will be noticed that no bacteriological test is suggested; the reason for this omission is that the committee recognised the difficulty of applying any such test; the avoidance of the presence of harmful micro-organisms must be insured, not by occasionally looking for them in the milk but by the maintenance of hygienic conditions in the farms whence the milk comes and amongst those engaged in the milking.

It is, however, not enough to lay down elaborate conditions under which the milk is to be produced and delivered; it is essential that by inspection the maintenance of these conditions should be assured. One of the constituent hospitals has for several years required that the farms whence its milk comes shall be liable to inspection by a representative from the hospital, but on no single occasion has any farm been visited. It is very harmful to lay down stringent conditions without taking care that these conditions are maintained, and it may well be that worse milk is supplied than if no conditions had been imposed, for the more conscientious milk providers will gradually be shut out and will cease to tender. For if a milk provider knows that the conditions will never be enforced, and if he be not perfectly scrupulous he will be able to underbid those who fully intend to carry out the letter of their tenders, and therefore the milk supplied will be worse than the conditions imply. It is of the first importance, therefore, that any condition inserted in a tender should be enforced by the hospital authorities and this requires not only that the milk supplied should be periodically tested at the hospital but also that the farms, the cows, and the *personnel* of the farms should be periodically inspected. An individual hospital could not afford to employ regularly an inspector, but if all the hospitals in London were to combine the cost of inspection need not be great. The visits must be fairly frequent and at irregular intervals if they are to be really useful. It is possible that the Central Hospital Council might serve to organise such an inspection. The quantity of milk consumed by the hospitals in London must be so enormous that they should be able to carry out great reforms in the methods of production and supply of milk, and indirectly to improve the quality of the milk obtained by London.

* This paper contains a form for the veterinary surgeon's report on the cows, an undertaking to be signed by the contractor not to supply milk from any animal found to be diseased, and on the back a blank form for the description of the disease of such animals and of their treatment.

WESTON-SUPER-MARE HOSPITAL.—On Jan. 21st a ward containing a single bed was formally opened at this hospital by the Rev. Prebendary Salis in the presence of a large gathering. The ward is called the "Poole Ward," as the late Mr. E. Poole bequeathed £1200 to endow the bed.

Annotations.

"Ne quid nimis."

A WARNING TO PRACTITIONERS.

THE Registrar of the General Medical Council has addressed a circular letter in the following terms to the licensing bodies, teaching institutions, hospitals, infirmaries, and asylums in the United Kingdom, some 1500 in all:—

It is very desirable that practitioners should not lose the privileges attaching to registration owing to their names ceasing to appear in the Medical Register. It has been found, however, that many practitioners, not fully appreciating this, especially within a short time of qualifying and registering, fail to give to this office from time to time an address at which official communications will reach them and they thus incur the risk of their names not being retained on the Register. In the interests, therefore, of the practitioners themselves the inclosed notice has been drawn up and I shall be greatly obliged if you will cause it to be displayed in a prominent place in your institution so that it may be brought to the attention of registered practitioners.

Yours faithfully,
H. E. ALLEN, Registrar.

The "enclosed notice" is a glazed card on which are printed the provisions of the Medical Act which enjoin registration on practitioners and rehearse the disabilities to which the disappearance of a name from the Medical Register renders its owner liable. All that is necessary for anyone to remember is to notify the registrar at the branch where registration was effected originally whenever a move is made which will be more than temporary. The chief offenders against this rule are probably young practitioners engaged in a series of resident hospital appointments. It is surely not much trouble to send a post-card when a change of appointment is made.

OFFICIAL ILLNESSES.

LEGISLATION has of late been busy with various forms of sickness or disease, when, that is to say, they affect employees. We are also promised a new and drastic Education Bill, but whether it will deal with the sicknesses to which teachers are liable is, of course, not yet known. The custom nowadays is to make it compulsory for the ratepayers to put their hands in their pockets for most expenses in education, and even where endowed schools exist there is a tendency "to improve" them out of existence. Our pious forefathers not only endowed schools for secular education but also provided for the teaching of religion, and, moreover, acting after that charity which the Apostle declared was the greatest of the three Christian virtues, made provision for the sickness of the teachers, or at least of one of them. Thus, we find in the statutes of "The School of St. Paul," founded by Colet in 1509, the following regulations as regards the Surmaister who was not, be it noted, the head or high master. "In sekenesse curable, as axis,[1] or suych other sekenesse for a time he shall be tollerated and have his full wagis." But the most remarkable statute is the following which shows a large-mindedness such as we doubt any educational authority would show now. "Yf after his commynge he fall sick into sickenes incurable, as Lepry, or Frenche Poxe, or after his long labour in the Scole fall into age ympotent, thenne I commit him to the charite of The Mercers, they of the cofer of the Scole to provide him a lyving as it may be possible, praying them to be charitable in that behalfe." Colet doubtless had a fellow feeling for those who were ill. The statutes for his school received their final shape in 1518 and in that same year he had his third attack of sweating sickness, of which there had been a severe epidemic in 1517. But it would be interesting to know why the "Surmaister" was allowed so much latitude in his ailments.

[1] Explained as being the *febris accessus* of Pliny, or ague.

A ROYAL COMMISSION ON WHISKY.

WE note with satisfaction that a Royal Commission has been appointed to make inquiry upon the whisky question. The *personnel* is a strong one and includes the names of Lord James of Hereford (chairman); Mr. Laurence N. Guillemard, deputy chairman of the Board of Inland Revenue; Mr. Walter Adeney, D.Sc., F.C.S., of the Royal University of Ireland; Mr. J. Rose Bradford, M.D., D.Sc., F.R.S.; Mr. Horace T. Brown, LL.D., F.R.S.; Mr. George S. Buchanan, M.D., medical inspector and inspector of foods to the Local Government Board; Mr. John Y. Buchanan, F.R.S.; and Mr. Arthur R. Cushny, M.D., F.R.S. The terms of reference are:—

1. Whether, in the general interest of the consumer or in the interest of the public health or otherwise, it is desirable (*a*) To place restrictions upon the materials or the processes which may be used in the manufacture or preparation in the United Kingdom of Scotch whisky, Irish whisky, or any spirit to which the term whisky may be applied as a trade description; (*b*) to require declarations to be made as to the materials, processes of manufacture, or preparation or age of any such spirit; (*c*) to require a minimum period during which any such spirit should be matured in bond; and (*d*) to extend any requirements of the kind mentioned in the two sub-divisions immediately preceding to any such spirit imported into the United Kingdom.

2. By what means, if it be found desirable that any such restrictions, declarations, or period should be prescribed, a uniform practice in this respect may be satisfactorily secured. And to make the like inquiry and report as regards other kinds of potable spirits which are manufactured in or imported into the United Kingdom.

THE OFFER OF A RECEPTION HOSPITAL FOR ACUTE MENTAL DISEASES IN LONDON.

Dr. Henry Maudsley has made the munificent offer of £30,000 to the London County Council to provide a hospital the main objects of which shall be, in his own words: "(1) The early treatment of cases of acute mental disorder, with the view, as far as possible, to prevent the necessity of sending them to the county asylums; (2) to promote exact scientific research into the causes and pathology of insanity, with the hope that much may yet be done for its prevention and successful treatment; and (3) to serve as an educational institution in which medical students might obtain good clinical instruction." The letter containing the offer was read at the meeting of the council on Feb. 18th, the scheme having already been before the asylums, the finance, and the general purposes committees. The council passed a unanimous vote of thanks to Dr. Maudsley for his offer.

THE GERMICIDAL EFFICIENCY OF LIQUOR CRESOLIS COMPOSITUS.

A CORRESPONDENT writes: "In THE LANCET of August 24th, 1907, p. 544, it was shown that the liquor cresolis compositus of the United States Pharmacopœia was a more efficient germicide than carbolic acid. Another formula for this preparation is given in the German Pharmacopœia differing from the former in containing alcohol. Both contain 50 per cent. by weight of cresol or cresylic acid. The alcoholic preparation has been examined bacteriologically with favourable results by Mr. Ernest Quant.[1] Mr. Quant, adopting the Rideal-Walker method, determined the value of the preparation in terms of carbolic acid. In the case of bacillus typhosus he found that in a solution of 1 in 400 the cresol solution was equal in germicidal power to a 1 per cent. solution of pure carbolic acid. Further experiments were conducted with a 2 per cent. solution of the cresol solution to ascertain what length of time would be required for the destruction of active strains of typhoid and diphtheria bacilli. A series of exposures lasting from one to ten minutes, was made and in every instance the bacilli were killed, thus demonstrating that these organisms may be destroyed by exposure for one minute to a 2 per cent. solution of liquor cresolis compositus."

[1] Pharmaceutical Journal, Dec. 14th, 1907, p. 778.

SUNSHINE AND RAINFALL DURING 1907.

—	Total number of hours sunshine.	Difference from average.	Days with rain.	Total fall.	Difference from average.
East Coast (England).				Ins.	Ins.
Scarborough	1488	*	179	22·7	-4·6
Whitby	1551	*	150	22·0	-3·7
Hull	961	*	195	24·8	-1·0
Skegness	1739	*	201	21·8	*
Cromer	1667	*	213	22·0	*
Lowestoft	1719	*	172	21·4	-2·3
Felixstowe	1726	*	154	20·3	*
Clacton	1729	*	150	16·7	*
South Coast (England).					
Margate	1628	+88	171	20·4	-2·8
Broadstairs	1799	*	171	22·7	*
Ramsgate	1786	*	—	—	*
Folkestone	1783	*	155	19·2	-3·8
Hastings	1803	+20	177	23·3	-5·8
Eastbourne	1848	+109	177	26·4	-4·5
Brighton	1691	-40	165	20·6	-7·0
Worthing	1781	*	158	21·8	-5·2
Bognor	1809	*	193	23·8	*
Bournemouth	1790	*	183	31·0	*
Southampton	1709	+44	182	30·8	-0·1
Totland Bay	1706	*	163	25·8	-2·3
Ventnor	1736	+13	178	24·2	-5·4
Torquay	1739	+8	201	33·2	-1·0
Plymouth	1656	+5	226	36·3	+0·4
Falmouth	1563	-203	220	45·1	-0·3
Guernsey	1860	-46	192	34·0	-3·6
Jersey	1839	-88	201	28·6	-5·6
Scilly	1588	-223	211	29·3	-4·4
West Coast (England and Wales).					
Newquay	1660	-27	211	30·9	-4·1
Tenby	1643	-43	—	—	—
Pembroke	1574	-68	223	37·2	+2·1
Aberystwyth	1368	*	—	—	—
Aberdovey	1458	*	221	41·0	*
Llandudno	1540	+84	203	26·3	-4·5
Rhyl	1640	*	211	24·2	-1·8
Hoylake	1493	*	208	26·3	*
Southport	1474	+8	206	32·6	-0·3
Blackpool	1520	+111	217	33·3	-0·5
Carnforth	1368	*	209	43·0	*
Douglas, Isle of Man	1514	-86	214	44·0	+1·7
Places Inland.					
Durham	1333	+16	167	24·8	-2·4
Newcastle	1022	-44	183	25·2	-2·2
York	1265	-11	211	25·6	+0·3
Huddersfield	1068	*	231	35·5	*
Belvoir Castle	1545	*	227	25·8	+0·4
Sheffield	1428	*	208	31·6	-1·0
Aspatria	1379	*	211	43·0	+4·0
Stonyhurst	1181	-175	220	50·0	+3·2
Prestwich	1137	+3	223	40·4	+3·4
Manchester City	894	*	224	33·9	-1·3
Birmingham	1105	*	173	22·9	+1·5
Nottingham	1250	*	197	23·5	-1·3
Cirencester	1575	+67	175	28·9	-1·8
Harrogate	1354	*	220	34·1	+4·6
Cheltenham	1602	*	174	29·0	+1·4
Bath	1674	*	187	32·3	+1·8
Tunbridge Wells	1635	+47	179	28·6	-1·0
Llangammarch Wells	1278	*	236	48·9	*
Bettws-y-Coed	1282	*	227	45·9	*
Oxford	1521	+23	176	26·9	+1·9
Cambridge	1484	-76	169	21·2	-1·5
Rothamsted	1566	+23	210	25·3	-2·6
Marlborough	1354	-42	223	29·3	-2·6
London District.					
Westminster	1234	+90	162	19·5	-4·9
Bunhill Row, E.C.	1183	+43	—	—	—
Greenwich	1417	-85	163	22·3	-1·8
Tottenham	1424	*	149	23·8	—
Norwood, S.E.	—	*	183	23·0	-1·9
Kew	1463	-4	182	23·8	-0·2
Scotland.					
Edinburgh	1178	+32	†197	30·7	+7·0
Strathpeffer	1191	+3	216	29·0	-3·2
Fort Augustus	957	+68	228	42·0	-2·6
Glasgow	1012	-83	204	42·6	+3·9
Nairn	1368	*	233	28·7	+4·0
Aberdeen	1400	-1	217	28·7	-2·0
Ireland.					
Dublin, Trinity College	1215	*	195	25·7	*
Birr Castle	1246	-106	250	33·9	+0·9
Armagh	1233	-57	237	31·6	-0·3
Markree	1211	-46	259	45·2	+3·2
Valencia I.	1333	-124	268	50·8	-5·7

* No trustworthy average. † This rainfall is for Leith.

The figures above represent the number of hours of bright sunshine, the number of days with rain (at least 0·01 inch), and the aggregate fall for 1907. All the figures have been published by the Meteorological Office and the sunshine values have been obtained by the burning recorder known as the Campbell-Stokes instrument. Along the east coast the sunniest spot was Skegness with 1739 hours, followed closely by Clacton-on-Sea, Felixstowe, and Lowestoft; and on the south coast the brightest resort was Eastbourne, with an aggregate of 1848 hours. This resort was, with the exception of Guernsey, the sunniest place in the Kingdom, although Jersey, Bognor, and Hastings were not far behind. In the south-west of England none of the resorts equalled Torquay with its total of 1739 hours, while in the north-west the brightest place was Rhyl with 1640 hours. Among the inland localities the brightest was Bath, with 1674 sunny hours, followed by Tunbridge Wells with 1635 hours, while the dullest was Manchester, with no more than 894 hours. In the metropolitan district Kew received about three-quarters of an hour per day more sunshine than the City, but the City station, Bunhill-row, had more than three-quarters of an hour per day more than Manchester. The mean daily difference between the City and Eastbourne was nearly two hours, while the mean difference between the two extremes, Eastbourne and Manchester, exceeded two and a half hours per day. It will be seen that most places in the south-west, and also those in Ireland, had less sunshine than usual, and that the greatest plus differences from the average were at Blackpool and Eastbourne. Referring to the rainfall it will be observed that Clacton-on-Sea was the driest place, with less than 17 inches of rain, and that inland the driest place was Westminster, where the total was 19·5 inches. Over the country as a whole the rainfall was almost identical with the normal, but most places in the south and east were drier than during an average year.

WHAT IS VINEGAR?

SOME interesting information on the preparation and sale of vinegar in relation to the administration of the Sale of Food and Drugs Acts is contained in a recently issued report to the Local Government Board by Dr. J. M. Hamill. It appears that various questions relating to alleged adulteration and misdescription of vinegar have been brought to the notice of the Board from time to time by vinegar manufacturers, public analysts, and others. Dr. Hamill in the course of his inquiry has visited the works of some 20 important firms of vinegar makers in London and the provinces and also those of smaller manufacturers of different kinds of vinegar. He has also gained information from public analysts, chemical advisers of vinegar brewers, acetic acid importers, and others. The view of many vinegar makers and public analysts is that a set of official definitions is demanded, and the following suggestions are made: 1. That vinegar or brewed vinegar should be a product obtained wholly by the alcoholic and subsequent acetous fermentation of a saccharine fluid obtained from malted barley, unmalted cereals, grain, or sugar, and should contain not less than 4 per cent. of acetic acid (in malt vinegar, in addition, the saccharine fluid should be obtained either wholly from barley malt or from a mixture of malted and unmalted barley, together with such proportions of additional substances as may from time to time be permitted by official regulation). 2. That artificial vinegar should be any vinegar or substitute for vinegar containing any added acetic acid which is not wholly the product of alcoholic and subsequent acetous fermentation and should contain not less than 4 per cent. of acetic acid. 3. That distilled vinegar and distilled artificial vinegar should be respectively the products of distillation of vinegar and artificial vinegar and contain not less than 4 per cent.

of acetic acid. 4. That spirit vinegar should be vinegar obtained wholly by acetous fermentation of a dilute alcoholic liquor which has been obtained by distillation and contains not less than 4 per cent. of acetic acid. Similar definitions are suggested for wine vinegar, cider vinegar, and fancy vinegars. It is further suggested that a system of supervision over the vinegar factories should be organised, a system which would be welcomed by many vinegar makers as a necessary part of any proposal to require the nature of different vinegars to be stated to the public in terms which conform to prescribed definitions.

A CASE OF PAPILLOMA OF THE TRACHEA.

ALTHOUGH the trachea may be involved by growths in organs adjacent to it, such as malignant tumours of the œsophagus or of the thyroid body, primary growths of the trachea are of great rarity. Dr. M. Zondek of Berlin records an interesting case in the *Berliner Klinische Wochenschrift* of Feb. 3rd. The patient was a woman, aged 28 years, who for three years had suffered at intervals from soreness of the throat, cough, and difficulty in breathing, usually as a result of catarrhal attacks, to which she was very liable owing to her home being in a cold, damp, marshy district. She never complained of hoarseness at any time. About 15 months before admission to the Jewish Hospital in Berlin she began to suffer from persistent dyspnœa which gradually increased until she eventually had a severe asphyxial attack which lasted for some minutes and was only relieved after the expectoration of a considerable quantity of muco-purulent sputum. On admission the patient was pale, with cyanosed lips, and was breathing rapidly with marked inspiratory stridor. The muscles of the alæ nasi and of the neck were strongly contracted during inspiration but the larynx only moved slightly. The head was held forward and the chin was thrown upwards. The voice was clear and natural but speech was slow and interrupted. This position of the head and this manner of speaking both dated from childhood. On palpation of the trachea it was found to bulge forward slightly on the right side. The thyroid was not enlarged; there were no glandular enlargement and no difficulty in swallowing. The pupils were equal and reacted normally. On laryngoscopic examination a tumour with a rough surface was seen on the anterior wall of the trachea, on the right side just below the vocal cords which appeared to be natural. The tumour appeared to reach so far into the lumen of the larynx that only a small chink was seen between it and the left vocal cord; it did not, however, extend beyond the middle line and did not move either on respiration or phonation. There were no signs of syphilis or of tuberculosis. An endo-laryngeal operation was out of the question, so tracheotomy was performed. The thyroid body was pushed downwards. A large quantity of purulent material escaped from the tracheotomy wound which was then prolonged upwards to the cricoid cartilage. The tumour when exposed was found to be of the size of a walnut and its base of attachment was about the size of a sixpence, its upper margin being a thumb's breadth below the vocal cord. The consistence was soft and there was no infiltration of the surrounding mucous membrane. It was removed by means of a sharp spoon, together with a small part of the adjacent mucous membrane. There was very little bleeding. Recovery was rapid and uneventful. On microscopical examination the tumour proved to be a papilloma. About five months later the patient returned to the hospital and at the site of the operation a tumour of the size of a bean had appeared. This was removed, together with some mucous membrane, by Professor Israel after tracheo-cricotomy. About three years later the patient again suffered from the same symptoms at her home and died under anæsthesia during an operation. The interest of the case lies in its rarity and in the characteristic nature of the symptoms, demonstrating an obstructive condition of the main air passage not involving the cords. Owing to the peculiar carriage of the head and the interrupted speech Dr. Zondek is of opinion that the tumour originated in childhood. The condition is thus comparable to the laryngeal papillomata which occur in children.

THE REEK OF THE CIGAR.

SMOKING nowadays is commonly tolerated in the house, and even in the drawing-room a cigarette is sometimes permitted. The smoking of a cigar, pleasant though it may be to the smoker, and however irreproachable its quality, is banned by most careful housewives in their *sancta sanctorum* because its reek is so persistent. The stale smell of cigar smoke in a room is peculiarly unpleasant and peculiarly difficult to get rid of. It clings to the curtains and to most of the articles of furniture which present any sort of an absorbent surface. It is not so to the same extent with cigarettes or with pipes. In the case even of a single cigar books, papers, and textiles reek of its stale flavour and the room requires abundant airing before that flavour is completely eliminated. Air is an excellent scavenger but ozone is more active in removing the smell. The effect may be traced to the fact that the smoking of a cigar produces a larger quantity of pungent aromatic oils than does the smoking of a cigarette or pipe. In the case of the cigarette oils are probably burnt even if they are formed, in the pipe they condense in the stem, while in the case of the cigar they are probably for the most part discharged into the air. In the form of a cigar tobacco would appear to produce more oils than in the form of a cigarette or when burnt in a pipe. Such common observations are not without hygienic significance. Pyrridine, the most poisonous oil produced in the semi-combustion of tobacco, is an abundant product in cigar smoking, as it is also in the pipe, but in the latter there is condensation while in the former there is little or none. In the cigarette, so intimately in contact with the air is the burning portion that the production of distilled oils is, comparatively speaking, trifling. The symptoms of tobacco-smoke poisoning are not necessarily due to nicotine; they are more often due to pyrridine, or poisoning from tobacco tar oils. The tobacco heart is more often traceable to free indulgence in cigar smoking than to a similar indulgence in the pipe and the cigarette. Young boys can smoke—to their great damage, nevertheless—a considerable number of cigarettes or even pipes, but an equivalent in cigars more than satisfies their tobacco appetite so soon are the toxic effects of cigar smoking made apparent to them. The danger of excessive cigarette smoking is that though no marked symptoms may be manifested or experienced, yet in the long run decided harm is done and a dangerous habit, akin to "nipping," is cultivated which it is often found very hard to abandon.

HIRUDIN AND BLOOD GASES.

THAT the blood flowing from the bite of the leech does not coagulate has long been known and has been attributed to the action of a material secreted by the salivary glands of that animal. The advantages which it offers in the investigation of the gaseous exchange of the organs of the body by preventing clotting are obvious and have recently been made the subject of a research (recorded in the *Journal of Physiology*) by Mr. J. Barcroft and Mr. G. R. Mines who have set themselves the task of determining whether it produces any alteration in the gases of the blood. The quantity of the active principle, hirudin, prepared for them in Leipsic, which they injected was 0·2 gramme

for every five kilogrammes of body-weight of the animal, the strength of the solution being about 1 per cent. It was found in some preliminary experiments that hirudin has no specific effect on the gases in drawn blood. When subcutaneously injected it was found that the oxygen in the arterial blood rose to a variable extent whilst the carbonic acid fell. The respiration was quickened, an effect that followed quickly upon a considerable fall in the blood pressure. The fall in blood pressure is consequent upon dilatation of the peripheral vessels in the visceral area and presumably elsewhere. Cerebral anæmia is thereby caused and consequently increased respiration. The increased respiration decreases the amount of carbonic acid in the blood to a slight extent and tends also to increase the oxygen. If hirudin be injected too rapidly death may occur.

THE LATE DR. W. S. PLAYFAIR.

THE sum of £1000 has been collected among the patients and friends of the late Dr. W. S. Playfair and is to be presented to King's College Hospital with a view to erect a memorial to him at the institution with which he was so long associated. In view of the eminent services rendered to the hospital in the past by Dr. Playfair, and in deference to the wishes of his family, it has been decided by the removal fund committee to devote this money to the building and equipment of an appropriate department of the new hospital shortly to be erected at Denmark-hill, this department to be named after him and to bear an inscription recording his 35 years' work at King's College Hospital.

A DEPILATORY FOR USE BEFORE SURGICAL OPERATIONS.

IN the *Journal de Médecine et de Chirurgie Pratiques* a formula is given for preparing a depilatory for use before operations. It consists of sodium monosulphide, 1 part; calcium oxide, 1 part; starch, 2 parts; and sufficient water to form a stiff paste. The longer hairs are removed with scissors and then, after washing the patient thoroughly, the paste is spread in a uniform layer with a spatula. After five minutes the paste is removed by means of a sterile swab of cotton and the skin is washed freely with sterile water to remove the alkali.

THE LOCKING OF MILK CHURNS.

THE proposal of the London County Council in a clause in its General Powers Bill to examine samples of milk at railway stations in its area is to be petitioned against by the East Sussex County Council. The London authority is anxious to trace the origin of any unwholesome milk that may arrive in the metropolis but the rural authority objects to the proposed power on the score of the possible hardship to the farmer. Many hours frequently elapse from the time when the farmer places the milk in a train at a country railway station and its process of being doled out at one of the London termini. Is the farmer to be responsible for the milk in the interim? The East Sussex County Council at its meeting on Feb. 11th replied in the negative. It asks that the particular clause may be amended by providing that the person producing or consigning the milk shall not be liable if he can prove that the milk contained no matter rendering it unwholesome or unfit for the food of man when so produced or consigned. To some extent the object of the farmer could be surmounted by the lids of the churns being locked during transit. This would prevent any possible tampering either during the railway journey or on the platform at any station, except by some authorised person. The general practice, as was pointed out over and over again in a series of articles which appeared last year in our columns dealing with the subject of the railway transport of milk to London, is not to lock up the churns: the contents are accessible to anyone—and anything that comes along. Of course, locking the churns would not obviate the harm that may occur through delay in transit, but it would stop much gross defilement.

"CAMPTODACTYLIA."

IN a clinical lecture delivered at the Charité Hospital in 1885 and in an article which appeared in the *Presse Médicale* of April 21st, 1906, Professor Landouzy has described under the name of "camptodactylie" (*καμπτός*, bent, and *δάκτῦλος*, finger) a condition of permanent and irreducible inflexibility of one or several fingers which develops gradually without pain or inflammation and affects only the interphalangeal joints, never the metacarpo-phalangeal. The palmar fascia is intact and the ends of the bones do not present nodosities. At a meeting of the Société Médicale des Hôpitaux of Paris on Jan. 10th M. Ch. Lesieur read an important paper on camptodactylia which, he said, might be unilateral or bilateral. When unilateral the right hand is the more frequently affected; when bilateral the condition most frequently commences in this hand and predominates there. Usually only one finger is affected, even in the bilateral form, and that finger is nearly always the little one. When more than one finger are affected the fingers involved are the little and ring, sometimes the little, ring, and middle fingers; the index participates only exceptionally. When several fingers are involved the little finger is always the most affected, the ring finger less, and the middle finger least. Each affected finger may be inflexible at one interphalangeal joint or at both joints. In the first case the deformity forms a more or less obtuse angle; in the second the finger has the aspect of a hook formed by a line broken at two points corresponding to the joints. It also may happen that the second phalanx is flexed on the first and the third extended on the second. A pathognomonic characteristic of camptodactylia is its irreducibility: extension of the finger is limited by the degree of the deformity and the impression is given of tension of the flexor tendon. On the other hand, there is no obstacle to flexion, and in some cases this movement shows adhesion of the retracted tendon to the overlying skin. Even when marked, camptodactylia does not interfere with the use of the hand. Professor Landouzy regards camptodactylia as a stigma of "neuro-arthritism" and due to some functional disturbance at the confines of the cervical and dorsal region of the spinal cord. But M. Lesieur thinks that the condition has some causal relation to tuberculosis for the following reasons: Camptodactylia resembles the retraction of the tendo Achillis which has been observed in tuberculous ulcers of the leg. In the condition termed by French writers "tuberculous abarticular rheumatism" fibrous tissue is involved. Finally, camptodactylia clinically resembles contraction of the palmar fascia, which some French writers regard as tuberculous. M. Lesieur therefore investigated 100 cases of camptodactylia. In these 87 of the patients were averredly tuberculous, seven probably tuberculous, and six appeared to be free from the disease. But of the last group several gave a family history of tuberculosis and the greater number showed slight lesions, such as acrocyanosis which is regarded as a tuberculide. In the 87 cases of averred tuberculosis the lungs were affected in 78, the lymphatic glands in 28, and the bones in seven. In most of the tuberculous cases the lesions were of attenuated virulence, with a tendency to sclerosis, progressing for the most part towards cure or even already cured. Thus camptodactylia is of great use both in diagnosis and prognosis of tuberculosis. It is possible to say that a patient is tuberculous simply by examination of his fingers, for camptodactylia is a stigma of tuberculosis. In prognosis it is equally useful; it shows that the tuberculosis

is of the sclerous type, i.e., of slow evolution and compatible with prolonged survival. In the words of Professor Landouzy, "The little finger of a patient tells his past, shows his temperament, and foretells his future."

PLAGUE ON THE GOLD COAST.

IN another column of this issue there will be found an advertisement from the Colonial Office stating that six medical men are wanted for plague duty on the Gold Coast. The terms as tersely put in the advertisement are, "six months' engagement, free passages to and fro, travelling expenses paid, camp equipment and tents provided; pay £50 a month," while experience in plague duty is naturally desired. The forms of application may be obtained before March 7th from the Assistant Private Secretary, Colonial Office, Downing-street, S.W. The decision of the Government to send extra medical help to the Gold Coast must not be taken to indicate that the outbreak has reached alarming dimensions. On the contrary, with the exception of a few cases at a small coast town called Brewa, the disease is still confined to Accra where it began early in January. The latest reports give a mortality of one, two, and three a day, and since the beginning the mortality has never exceeded six in one day. As has been already announced in our columns, Professor W. J. R. Simpson, M.D., was despatched to Accra with an assistant at the beginning of the year, and very energetic measures have been taken; but the available medical staff is felt not to be sufficient to enable a close watch to be kept over the various towns on the coast which are at present free from infection, but where, as a measure of precaution, it is very desirable to have competent observers stationed so as to detect at the outset any cases or suspected cases of plague. Hence the demand for special officers is a valuable preventive measure, and we trust that the Government will have no difficulty in obtaining what is sought.

DEAR BUTTER.

THE substantial advance in the price of pure butter will come as a hardship to many families. Accounts are more or less conflicting as to the causes which have led to the increased price, but two factors have been mentioned as responsible, one of which is a shortage in the supply, and the other fresh legislation in regard to the sale of butter substitutes. We are inclined to attribute the rise in price entirely to the new Butter and Margarine Act which came into force on the first day of this year. If we are right in this view, then the conclusion is inevitable that enormous quantities of foreign fat have been sold in the past as genuine butter. The new Act, in short, is the death-blow to this dealing, and the fact that the supply of genuine butter has become short is significant. The effect should be a great stimulus to the genuine butter industry and we have little doubt that the demand for genuine butter will be more than adequately met as the position is accepted. Meanwhile the public need not suffer any shortage in regard to that most important element in diet, namely, fat. It may be true that genuine butter fat is the most digestible of all fats, but there can be little doubt that many of the substitutes are nearly if not quite as good in this respect. Margarine, cotton-seed and other vegetable oils, and dripping are perfectly wholesome and palatable substances and afford good human food. It is no argument against their use for dietetic purposes that certain of them have been employed wherewith to adulterate butter. The question never has been that these substitutes were injurious or unfit for food; it was purely one of misrepresentation. They were sold entirely or in part as butter when they were not butter, and that fact alone has created a prejudice against them as articles of food—a prejudice which we hope will disappear now that the sale of the genuine article has been placed on a satisfactory basis. We welcome this new Act because it is an Act calculated to make things what they seem, and the present dear price of genuine butter will, we are inclined to think, be only temporary.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

H.R.H. the Prince of Wales, at the suggestion of the Executive Committee of King Edward's Hospital Fund for London, has decided to appoint a committee to inquire into the system prevailing in the London voluntary hospitals with regard to the admission of out-patients. We learn this fact with pleasure, for provided that the committee be well chosen its pronouncement upon the best way of dealing with the acknowledged troubles of hospital abuse might be regarded in some sort as authoritative. The evils of hospital abuse are many and are not apparently on the decrease, but great difference of opinion exists, even among those who have studied the problems most closely, as to the direction in which remedy should be sought, this difference being equally present whether the right of the sick poor or the wrongs of the exploited medical profession are under consideration. We are informed that in view of the fact that some portion of the subject of inquiry by such a committee would probably fall within the subjects to be reported upon by the Royal Commission on the Poor-laws the committee will not be appointed until that Commission has reported.

The Department of Public Health of Queensland, in a bulletin dated Jan. 11th, states that no case of plague in man has occurred since Jan. 1st. The Acting Governor of the Gold Coast, in a telegram received at the Colonial Office on Feb. 13th, states that the total number of deaths from plague at Accra for the three days ending Feb. 12th were 5. The new cases numbered 6. Further telegrams received respectively on Feb. 14th and 15th state that 1 death occurred from plague at Accra on Feb. 13th and 1 on Feb. 14th. No fresh cases had been notified.

As we have already announced, the 135th anniversary dinner of the Medical Society of London will take place at the Whitehall Rooms, Hôtel Métropole, London, on March 11th, under the chairmanship of the President of the society, Dr. J. Kingston Fowler. Applications for tickets should be made to the honorary secretaries, Dr. F. J. Poynton and Mr. T. H. Kellock, 11, Chandos-street, Cavendish-square, W.

FAVOURED for the greater part of his short visit with good weather for the time of year, His Majesty the King derived great benefit from his week's stay at Brighton. His Majesty's personal assurance that he had benefited by his stay has been made public, as well as his hope to pay another visit to Brighton.

Mr. Charters J. Symonds delivered the second Lettsomian Lecture for 1908 before the Medical Society of London on Feb. 17th, the President, Dr. J. K. Fowler, being in the chair. This lecture will be published in THE LANCET in a future issue.

CREMATORIUM FOR ST. PETERSBURG.—The president of the sanitary committee has submitted his report to the St. Petersburg town council in favour of the establishment of a crematorium in the town to be used with due regard to the interests of justice and in fulfilment only of the testamentary instructions of such deceased persons as may have decided to be cremated.

ANNUAL REPORT FOR 1906 OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.[1]

III.

IF justification were required of the policy of the London County Council in combining under one authority the administrative functions of public health and elementary education, it is difficult to conceive how this could have been more completely accomplished than by the publication of the comprehensive and instructive report that lies before us.

The second appendix to this report is from the pen of Dr. James Kerr, the Council's medical officer for education. This report shows that, as regards the metropolis, a good beginning has been made to give effect to some of the chief recommendations of the Duke of Devonshire's Committee on Physical Deterioration. It will be remembered that one of the most important of these recommendations was that a medical examination should be made as to the mental and physical condition of every child on admission to an elementary school. Even a cursory reading of this report will suffice to indicate that a very serious amount of mental as well as of physical defect has been discovered among children in attendance at those of the London schools which have already been medically examined. To some of these we propose very briefly to allude.

It will surprise no one to hear that supreme importance is attached by the education authority to the medical inspection of the very youngest children—the "infants," as they are technically classed. It is at the earliest ages that slight defects or diseases have a profoundly modifying influence on the future; and it is of special importance that children of from three to five years should be examined in order that the beginnings of tuberculous bone and joint diseases amongst others may be detected, and thus permanent crippling may in all probability be avoided. With the staff at present at the department's disposal detailed examination is impracticable, but an attempt has been made by sampling to ascertain what medical inspection of infants really means and what it is likely eventually to lead to when effectually carried out. For this purpose examination was made by Dr. E. M. Niall of 14 schools, varying from the slum areas of Vauxhall, through the artizan areas of Lambeth, to the better class districts of Brixton and Norwood. The effect of environment appears at once from the fact that the survivors of the slum children at the age of five are as a rule sturdier and quicker than the more carefully nurtured cihldren who have not been exposed to hard climatic conditions, but who on the other hand appear to present larger numbers of dull and backward children with anæmia, nasal obstruction, and glandular troubles. Two neighbouring schools, Lollard-street and Walnut Tree Walk, presented respectively the highest and the lowest number of defectives. Lollard-street, the school with the highest proportion (27 per cent.), is in a poor district abounding in fried-fish shops. Many of the mothers are wage-earners, returning home late at night too tired to look after the children. As might have been anticipated, semi-starvation and home neglect are factors in these unhealthy surroundings. The high percentage of defectives in this school was due in part to the presence of large numbers of children below the average in mental ability in one of the classes—a dullards' class containing 47 per cent. of children with some obvious defect. It is for such a class as this more particularly that early medical inspection is imperatively necessary, for by this means many cases of corneal ulceration, marginal blepharitis, incipient ophthalmia, and otitis may be detected and presumably remedied. Very harmful are what are designated "dirt conditions," especially in relation to the eyes, nose, and ears, ulceration of the corneal surface often leaving permanent damage. In many cases the parents will do nothing, even when asked by the teachers. These "dirt" inflammations in children of debilitated constitution are the chief conditions of slum schools.

But Dr. Kerr is careful to remind us that general medical inspection must eventually lead to the establishment of "school clinics" for treatment in ways which he takes pains to define. Without such treatment mere medical inspection is, in his judgment, incomplete and generally means time and trouble wasted. Most of these cases are neglected. Some few are attended to at hospital, but generally this is unsatisfactory and of late very many cases have been refused treatment.

If individual medical inspection of school children becomes general, we are warned that all the hospitals in London would not provide for the treatment of one-tenth of the children that would require treatment for diseases of the eyes, ears, and teeth alone. In order to cope with these cases Dr. Kerr suggests that the question of school clinics ought to become a subject of careful inquiry and as a question of elementary education should receive the early consideration of the County Council. To anyone fairly conversant with the untoward conditions normally obtaining among the infant denizens of our slum neighbourhoods it will occasion no surprise that of all the morbid conditions revealed by medical examination of school children by far the most important are those in which tuberculosis in one or other of its forms plays a prominent part. In the course of an investigation concerning the prevalence of tuberculosis in elementary schools Dr. Annie C. Gowdey reported on the condition of the spinal column of more than 400 young girls at Addison-gardens school. Of these girls, whose ages varied from six to 16 years, not less than 64 per cent. showed more or less abnormality. Very many of these girls had "round backs," whilst the scapulæ of not fewer than half of them were reported to be "growing out," with or without some lateral curvature. Unless the state of matters at this school be exceptionally bad, and if the condition of the children there is typical of what obtains among school children of the same age elsewhere, it is obvious that further investigation is required with a view of obviating some of the incidents of school life which, at this school at any rate, appear to have produced deplorable results. Dr. Kerr comments on the excessive prevalence of deformity of the back among girls as compared with boys, and points out that this is due to some specific cause, such, e.g., as a want of regular development of the trunk muscles induced by various constrictions and supports in the way of binders and corsets. Meantime, he suggests the desirability of directing the attention of teachers who superintend drill to the many causes that have been assigned for this condition, such as the imperfect lighting of school-rooms, the habit of sitting cross-legged, and of standing with the weight of the body constantly resting on one leg.

The examination of girls in the secondary schools has also been carried out on a limited scale during 1906. In so doing Dr. Janet M. Campbell found it possible to conduct inquiry respecting the general physique of the girls with more detail than was possible in the case of the elementary school children before referred to. Out of 604 girls examined, 138 showed definite lateral curvature. Definite osseous deformity, not admitting of correction, was presented by seven of these girls, their ages being from 15 to 22 years. In all the other cases the deformity could be made to disappear by changes of posture. These girls migrate, for the most part, from the elementary schools, and their average standard of physique is not high. As they have all been previously examined medically, many defects had already been remedied. Of the 138 girls with spinal curvature, 10 were above and 37 were below the average in general physique.

Exaggerated and even alarmist reports having appeared from time to time to the effect that pulmonary tuberculosis is excessively prevalent among children of school age, the medical officer has very usefully addressed himself to the task of ascertaining how far children at school age are really affected with pulmonary tuberculosis, and also how far they are likely to be a danger to others. It should be premised that in the metropolitan schools there has long existed the salutary regulation that whenever a child is supposed to be suffering from consumption, and especially if he coughs and expectorates, he is forthwith excluded from school. Teachers similarly affected are likewise excluded for at least 12 months. The risks of infection from persons obviously suffering from pulmonary tuberculosis are therefore believed to be small. In order to ascertain by careful medical inspection the extent to which children of school age are actually suffering from pulmonary tuberculosis, the boys and girls, 1670 in number, in attendance at two large schools situate in Latimer-road and Addison-gardens respectively, were examined and the results tabulated for the present report.

[1] Previous notices of this report appeared in THE LANCET of Jan. 25th, p. 250, and Feb. 8th, 1908, p. 445.

From this examination there were certain indirect results that are worthy of note. For instance, we learn that children, not necessarily consumptive, were found to be suffering from physical defects which either interfered with school progress or were likely seriously to influence the future life of the children, and for these medical treatment was enjoined. Many cases of heart trouble, greatly enlarged tonsils or adenoids, and carious teeth were thus detected and placed under treatment. As to the actual returns respecting the two schools above specified, out of 1670 children examined, signs in the lungs that would justify a diagnosis of tuberculosis were found in *eight cases only*. In 14 other children slight signs were found—prolonged expiratory breath sounds, or dry fine crepitation at the margin of the lungs—which might possibly be due to tuberculous infection. Even if these are included as actual cases of tuberculous disease, the percentage of possible pulmonary tuberculosis reaches only 1·3 per cent. There is a further small proportion in which enlarged veins on the chest suggest the possibility of enlargement of bronchial glands due to tuberculous changes, but without any evident lung affection. Nearly three-fourths of the children examined presented enlargement of the cervical lymphatics and over 40 per cent. had enlarged tonsils.

Within the administrative County of London there are at the present time 23 invalid schools containing about 1800 physically defective children. These children are daily conveyed to and from school in 35 ambulances and 11 omnibuses, and their conveyance to school as well as their care there are provided for by the employment of 24 nurses. The admission of an invalid or crippled child to these schools is permitted only after medical examination. In most cases the decision as to whether or not a child is fit for admission is an easy matter. But there is clearly an advantage in securing for special cases the opinion of an expert surgeon. It is necessary to have regard to the possible future of the child in each particular case. Some children would be the better for gentle exercise or work suited to their strength, whilst for others absolute rest is a necessity. During the past year Mr. R. C. Elmslie has carefully examined every case on admission to school with manifest advantage to the children under his care. He has examined more than a thousand children in 15 "physically defective" centres, and has noted in each case the nature of the disease or defect, the prevalence of active disease or of deformity, and the efficiency of any treatment adopted. Of these cases in the aggregate 80 per cent. began before the age of seven years and 67 per cent. below five. Of the spinal cases 72 per cent. occurred before the fifth year of life, whilst of the hip cases 64 per cent. occurred between the ages of two years and six. In the large majority of cases of tuberculous disease of the spine the onset of the disease occurs quite early in life, somewhere between the second and the fifth year. Tuberculous disease of the hip-joint is evident at a somewhat later age than spinal caries. The age distribution of tuberculous disease of the knee-joint is much more even than that of the two preceding forms of infection, the disease appearing for the most part about equally in each year of the first nine. Of the 83 cases observed two were bilateral, in 27 of which the disease was active and in 54 inactive. Very interesting particulars are given of the results of tuberculous bone disease, as regards deformity, crippling, &c., but for these reference must be made to the report itself.

SANITARY REFORM IN INDIA.

I.

AN important letter has been recently addressed by the Secretary to the Government of India, Home Department, to all local governments and administrations upon the subject of sanitary reform. We reproduce it verbatim and hope that our readers will appreciate the fact that a grand effort is now being made to improve the public health of our enormous Eastern Empire:—

1. I am directed to address you on the important subject of the improvement of the sanitary services in India and the development of the present establishment on lines which will bring it abreast of modern requirements.

2. The history of sanitary administration in India was reviewed in the Home Department Resolution of Sept. 8th, 1904, in which the appointment of a Sanitary Commissioner with the Government of India was announced. That resolution concluded with the expression of a hope that, with the assistance of the Sanitary Commissioner's advice and in consultation with local governments, substantial progress might in the course of time be made towards a complete reorganisation of the Sanitary Department. The Governor-General in Council is of the opinion that the time has come when an endeavour may be made to realise expectations and I am accordingly directed to offer for consideration the following suggestions regarding the nature and direction of the advance which should now be made.

3. The administrative machinery of the sanitary department is already, in most respects, fairly complete and efficient. Additional deputy sanitary commissioners are probably needed in some provinces, and I am desired to request that the question of increasing their numbers may be borne in mind. These officers are at present recruited solely from the Indian Medical Service, and though that arrangement must probably continue for some little time, the Government of India are disposed to think that the appointment should not be reserved exclusively for officers of that service, but should be open also to the medical officers of health referred to below. And they are further of the opinion that no officer of the Indian Medical Service should be appointed a deputy sanitary commissioner, unless he is of less than seven years' service and has secured a degree or diploma in public health. The latter condition would be applied to all candidates whether members of the Indian Medical Service or not.

Sanitary Boards.

4. Another part of the administrative machinery which has been developed in different degrees and has attained positions of varying usefulness in different provinces is the Sanitary Board. The Government of India believe that these boards are beneficial in emphasising the importance of the subject of sanitation, in correlating sanitary schemes with administrative exigencies, and in securing direct discussion between sanitary experts and those who are in a position to appreciate and represent the attitude of the general population. They are disposed to think that the Board should consist of from three to five members, including a senior officer of the Civil Service, who is in close touch with the local administration, the sanitary commissioner, and the sanitary engineer as experts, and one or two natives of India, preferably non-officials. If the chief engineer and the head of the Provincial Medical Service are placed on the board the local government is deprived of the independent expert advice which it requires when dealing with the board's recommendations. The functions of these boards have hitherto been mainly advisory, but it is possible that they might be so constituted as to be able to relieve local governments of much work of minor importance. I am directed to suggest that the question of the constitution and powers of the sanitary board should be examined and to request that the Government of India may be favoured with your opinion and proposals upon this question.

Medical Officers of Health.

5. Turning now to the executive establishment the first defect that forces itself upon the attention is the inadequacy of the staff of medical officers of health. The Presidency towns and a few other cities have such officers, but speaking generally the civil surgeon is the only health officer of the towns in a district. It is often difficult for him to give sufficient attention to the sanitary requirements even of the headquarters town. It is quite impossible for him to do more than make an occasional inspection of other towns. A complete and qualified staff of sanitary experts is a necessary preliminary to any substantial improvement of sanitation. If reforms are to be planned on right lines and carried out with efficiency and economy the work cannot be left in the hands of officers who have only a general knowledge of the subject and whose time is largely occupied by other duties.

6. The Indian Plague Commission of 1900 recommended that a special European medical officer of health should be attached to every town which contains a population of 100,000 inhabitants, and that one European assistant health officer should be provided for each additional 100,000 inhabitants. The Government of India consider that the standard of population suggested is reasonable and moderate. They are of opinion, however, that it is unnecessary and even inexpedient to require that all these health officers should be Europeans. A sanitary service offers a suitable and

congenial career for educated natives of the country, and by fully utilising this source of supply the Government will avoid the expense of materially enlarging the Indian Medical Service or of importing specially trained officers from England for the present. At least it will be necessary to insist upon a training in Europe as a qualification for employment, as the experience gained thereby would be wider and more valuable than could as yet be obtained in India. A health officer who has undergone such a training and is at the same time possessed of an intimate acquaintance with the customs and prejudices of the people would be singularly well equipped for the difficult and delicate duties connected with sanitation in India. He would on the one hand have the best scientific knowledge available, and he would on the other be able to avoid arousing that opposition which the application of Western sanitary science to Eastern conditions too often excites. The Governor-General in Council does not suggest that the combination of these qualities is not found in European officers or that it will always be found in natives of India. He knows that the contrary is the case. He proposes, therefore, that the new appointments shall be open to both classes alike, but on grounds of economy preference would naturally be given to Indian candidates when men with the necessary qualifications are forthcoming.

7. For towns with a population between 20,000 and 100,000 a medical officer of health will also ordinarily be necessary, but financial considerations will render it compulsory to accept a somewhat lower standard of scientific attainments than that prescribed for the larger cities. These appointments may, the Government of India think, be recruited from natives of India of the civil assistant surgeon class, who on the completion of their medical training have taken a special course in public health at one of the medical colleges. The appointment of such an officer may not be necessary for every town of the class referred to, and where the headquarters town of a district is small it will probably be possible to combine the appointment of health officer with the medical charge of the district. In that case it will probably be desirable that the civil surgeon should be chairman of the sanitary subcommittee where there is one.

8. The Government of India are advised that it should be laid down as an inviolable rule that a medical officer of health should not be allowed to undertake private practice. Although a small amount of such medical work might not interfere with the performance of the health officer's proper duties, yet if private practice is once allowed it is impossible to put a limit to it and it is, therefore, best to forbid it altogether. This restriction will necessitate the salaries of health officers being fixed on a more liberal scale than would otherwise be required, but the advantage of securing the officers' whole time and undivided energies far outweighs the somewhat problematical economy that might be effected by permitting private practice.

Sanitary Inspectors.

9. The subordinate supervising staff of the Conservancy Establishment also calls urgently for improvement. In most towns there is an official whose functions resemble those performed by an inspector of nuisances in England. Except in the presidency towns, however, and in the Madras municipalities, it is very rare to find in this position a man who has any technical knowledge of his subject. The Government of India are assured that one of the most crying needs of municipal sanitation in India is a body of men fit to undertake the duties of sanitary supervision, which are performed by inspectors of nuisances in Great Britain. It is urged that medical officers of health will not and cannot be expected to undertake work of this subordinate character and that the existing establishments of untrained supervisors and overseers are not able to give the health officer the assistance which he has a right to demand. If this assistance is denied, many petty and irksome duties will be imposed on the health officer, and suitable men will not be obtained for that office. Just a a trained subordinate acts as a link between the executive engineer and the working labourer, so a trained subordinate is required by the executive sanitary officer. It is imperative, therefore, that measures should be taken without delay to remedy this defect in the administration. The strength of the establishment required will depend not on the population alone but on other local circumstances also. In the large cities a trained inspector will probably be needed for each sanitary division, with perhaps a chief inspector in addition. For other towns the number of inspectors required will vary with the population, the area, and sanitary condition. In many a single officer will ordinarily prove sufficient.

10. The training of these sanitary inspectors is a question which will require very careful consideration. The standard required should be that prescribed by the Royal Sanitary Institute, with whom arrangements could no doubt be made for the issue of certificates to successful candidates. If that is thought desirable the course of instruction should embrace lectures in elementary physics, physiology, general hygiene, and minor sanitary engineering. Admission to the courses of instruction should be confined to candidates who have passed some examination not lower than the school final or the university matriculation examination and are of good physique, satisfactory character, and suitable caste and social status, the consideration to be borne in mind in fixing this last qualification being that a sanitary inspector must be able to move freely among all classes of the population. To attract men of the right stamp it will be necessary to offer good pay. A scale of salaries rising from Rs. 50 to Rs. 150 will probably prove suitable in most provinces.

Advantages of Certainty of Tenure.

11. There remains the important question whether the medical officers of health and sanitary inspectors should be formed into a regular provincial sanitary service, or whether each local authority should be allowed to recruit its own staff independently. The objections urged against the latter course are: (1) that a career which is limited to employment by local authorities on uncertain terms and without prospect of pension will not attract candidates of the right stamp if, indeed, it attracts candidates at all; and (2) that the insecurity of tenure of appointments under local authorities will tend to deter young men from qualifying themselves for such appointments. The duties of a sanitary officer will of necessity often bring him into conflict with members of the local authority or their relatives, and if he is merely the servant of the board or council he will either neglect his duty in such cases or perform it at the risk of losing his post. On the other hand, it is argued that the creation of a provincial service of sanitary officers will conflict with one of the main principles of local self-government and it is urged that in no branch of local administration is local control so necessary as in matters connected with sanitation. The Government of India could not agree to any proposal which did not leave to the local authority the control of its executive officers, whether of the sanitary or any other establishment. On the other hand, they are convinced that in the case of the sanitary officers certainty of tenure during good conduct must be assured. How this can best be secured is a question upon which the Governor-General in Council would like to have the opinions of local governments. It is not necessary to insist upon uniformity of treatment and arrangements which are expedient in one province may not be so suitable in another. The creation of a provincial service offers one solution, and for the purpose of attracting candidates this is probably the best solution. When a member of such a service held a post under a local authority he would be in a position corresponding to that of a member of the subordinate medical service in the employ of the municipal or district board. An alternative to the creation of a provincial service is for the Government to prescribe: (1) the minimum number of sanitary appointments for each local authority; (2) the minimum salary to be given to the incumbent of such appointments; and (3) the professional qualifications to be required of incumbents. This would possibly afford a prospect of employment sufficiently good to induce candidates to undergo the qualifying course of instruction. To secure fixity of tenure it would be necessary to provide that no medical officer of health or sanitary inspector should be removeable from office without the sanction of the local Government in the case of the former or of the Sanitary Commissioner or perhaps the Sanitary Board in the case of the latter. Regulations somewhat similar to these exist in England and Scotland and are necessary to secure the employment of properly qualified men and to guarantee protection against arbitrary treatment in retaliation for the fearless and efficient performance of duty.

12. The Government of India do not propose to discuss at present the thorny question of sanitation in rural areas. Assistant health officers are probably necessary in some districts and trained inspectors would often, no doubt, be useful to local boards to undertake special inspections or to provide sanitary measures on special occasions, such as fairs

and festivals. Their services would further be valuable in connexion with measures against plague and other epidemics. If a supply of trained men is brought into existence local bodies should be encouraged to avail themselves of it for services of this nature, but in most provinces it is probably undesirable to go farther than to require that where sanitary inspectors are employed none but trained men should be appointed.

Sanitary Engineers.

13. The question of providing an efficient staff of sanitary engineers has been engaging the attention of the Government of India for some time and the conclusions at which they have arrived will be announced in a separate communication. The matter is mentioned here only in order to give an assurance that its great importance in connexion with the subject of sanitary advancement has not been overlooked.

14. I am directed, in conclusion, to request that the various suggestions which have been put forward in this letter may be considered and that after consulting such official and non-official opinion as may seem desirable you will favour the Government of India with an expression of your views upon the whole subject. The Government of India would like at the same time to learn what specific action you propose to take in order to give effect to the accepted policy of sanitary improvement.

Postscript (to Madras only).—The Governor-General in Council is aware that there already exists in Madras a body of trained sanitary inspectors and that rules regarding their employment and remuneration have been issued by the local Government. Much of the foregoing discussion of this subject is, therefore, inapplicable to the circumstances of that Presidency. On the other hand, the experience gained there will be valuable in dealing with the questions under consideration and the Government of India hope that the Governor in Council will favour them with an account of the Madras system, together with his opinion on the value of the results obtained and the direction in which amendment may be desirable.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council was held on Feb. 13th, Mr. HENRY MORRIS, the President, being in the chair.

The SECRETARY reported the death of Mr. William Allingham, past member of the Council. The following motion was carried:—

That the Council hereby express their sincere regret at the death of Mr. William Allingham and their sympathy with the members of his family. The Council do also record their appreciation of Mr. Allingham's services to the College while Member of Council and their regard for the skill and ability which won for him a prominent position among the surgeons of the time.

It was resolved to issue diplomas of Membership to 66 successful candidates. It was also resolved to issue, in conjunction with the Royal College of Physicians of London, diplomas in Public Health to 12 successful candidates.

The Council then proceeded to the election of the Conservator of the Museum, and from the candidates, all of whom were zoologists, the Council selected Mr. Arthur Keith, M.D. Aberd., F.R.C.S. Eng., lecturer on anatomy and Curator of the Museum at the London Hospital Medical School.

At the last annual meeting of Fellows and Members the following motion was carried:—

That the President and Council of the Royal College of Surgeons be asked to use their moral influence with hospital authorities to recognise Members of the College (who are also in almost all cases Licentiates of the Royal College of Physicians) as having equal rights with Provincial, Scotch, and Irish graduates to become candidates for hospital appointments.

In accordance with the report of the committee which had been considering this resolution the Council decided to send the following memorandum to the hospitals in England and Wales:—

Attention having been called to a regulation in force at some hospitals, under which the ordinary pass degree of any British University is accepted as qualifying for appointments on the staff, whereas the diplomas of M.R.C.S. Eng. and L.R.C.P. Lond. are not so accepted, the Council of the Royal College of Surgeons of England desire to point out the injustice of this regulation to Diplomates of the two Royal Colleges. In the first place the Council would call attention to the fact that since the introduction of the five years' curriculum the course of professional study required at the universities has not been longer than that required by the Colleges. Moreover, statistics recently compiled by a committee of the General Medical Council show that the average course of study in England is longer than that in Scotland or Ireland, and the inference is drawn by the committee that this difference is due to the regulation of the Royal Colleges in England which guarantees for the subjects of the final examination an uninterrupted period of study of two years from the date of the completion of the intermediate examination.

With regard to the standard of examination, the Council maintain that the examinations in professional subjects, which candidates for the diplomas of the Royal Colleges in England are required to pass, are not less exacting than those required for the pass degrees of most universities. In support of this contention the Council would point to the marked success of the diplomates of the Royal Colleges in England at the examinations for the Royal Navy Medical Service, the Royal Army Medical Corps, and the Indian Medical Service. (See below.)

The Council believe that, in many cases, the regulation in question was made at a time when there were not more than four universities in England, and when the conditions for obtaining the degrees of those universities were in some respects more exacting than those imposed upon candidates for the diplomas of the two Royal Colleges; but, having regard to existing conditions, they are of opinion that, in all cases in which those holding only the pass degree of a university are accepted as eligible for staff appointments, the same privilege should be accorded to those who hold the diplomas of M.R.C.S. Eng. and L.R.C.P. Lond.

The Council therefore trust that the authorities of hospitals in England and Wales, who make this distinction between diplomates and graduates, will see their way to modify a regulation which affects unjustly many who have studied and qualified in London, where the clinical advantages for medical and surgical education are unsurpassed and places them at a disadvantage with those who have graduated in Scotland, Ireland, and elsewhere.

Analysis of Returns as to the Examinations for the Medical Department of the Royal Navy, the Royal Army Medical Corps and the Indian Medical Service during the five years 1903–07, compiled from Tables presented to the General Medical Council.

	Passed.	Rejected.	Percentage passed.
M.R.C.S. Eng. & L.R.C.P. Lond.	344	20	94·5
English University Graduates	133	12	89·5
Irish University Graduates	153	25	85·9
Scottish University Graduates	162	40	80·1
L.S.A. Lond.	14	5	73·6
Indian and Colonial University Graduates	16	9	64·0
Irish Conjoint Diplomates	76	46	62·2
Scottish Conjoint Diplomates	50	42	54·3

The foregoing statistics are compiled from the results of 27 examinations, and the high position in order of merit obtained by the diplomates of the two English Royal Colleges is shown by the following table:—

First place gained by	M.R.C.S. Eng. L.R.C.P. Lond.	18 times in 27 examinations
Second	" "	20 " " "
Third	" "	14 " " "
Fourth	" "	15 " " "
Fifth	" "	16 " " "

It was resolved that the Royal College of Physicians be informed that the Council is preparing to issue a circular to Fellows and Members of the Royal College of Surgeons of England asking their opinion as to whether or not it is desirable that women should be admitted to examination for the diplomas of the College, and that pending the result of this inquiry it is not proposed by the Council to take any further steps with regard to the petition from the London School of Medicine for Women. The following is the circular to the Fellows and Members:—

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

DEAR SIR,—The Council, although they have decided that it is desirable to admit women to examination for the Diploma of Member, and although they have power to act upon this opinion, are anxious, in accordance with a resolution passed at a meeting of the Council on May 9th, 1907, to obtain the views of the Fellows and Members on the matter.

In regard to the corporate position of women if the diplomas of the College be granted to them, the Council have taken legal opinion and are advised that, while under the Medical Act of 1876 (39 & 40 Vict. Ch. 41) women can be admitted as Members or as Fellows, no woman so admitted would thereby be entitled to take any part in the government, management, or proceedings of the College.

It is hoped that you will answer the questions on the accompanying post card, and return the card at your early convenience. In order to give time for the arrival of replies from the colonies and other distant localities, the poll will be kept open until the day of , 1908.

Voting Card.

Answer.

A. In your opinion is it desirable that women should be admitted by examination as Members of the College.

B. In your opinion is it desirable that women, after admission to the Membership, should be admitted by examination as Fellows of the College.

(Please answer YES or NO.)

Dr. J. Ward Cousins was reappointed the representative of the College on the Central Midwives Board.

A letter was read from the President of the General Medical Council stating that a committee of the Council had been appointed to prepare a fresh edition of the British Pharmacopœia, and inviting the College to send to the committee before April 30th next any recommendations or suggestions. A committee was appointed to consider the matter.

A letter was read from the President and secretaries of the Geological Society of London thanking the Council for the address presented to the society at the celebration of the centenary in September last.

The PRESIDENT reported that he had chosen Mr. W. Watson Cheyne as Bradshaw lecturer for the ensuing collegiate year.

The PRESIDENT reported that the vacancy on the Board of Examiners in Dental Surgery, occasioned by the expiration of the period of office of Mr. W. A. Maggs, would be filled up after the ordinary Council meeting in March. Mr. Maggs is eligible for re-election.

Upon the suggestion of the PRESIDENT, a small committee was appointed to keep the Council informed as to what is being done from time to time regarding the medical inspection of school children and the arrangements for teaching elementary hygiene in training colleges and schools.

THE MEDICAL INSPECTION OF SCHOOL CHILDREN.

THE following circular containing a schedule of medical inspection has been issued by the Board of Education to local education authorities. The schedule has been drawn up in response to requests which the Board of Education has received for further and more definite guidance as regards the details of the work of medical inspection. Sir Robert Morant writes as follows to the local education authorities:—

The Board have been pressed by many local education authorities to issue a complete set of forms for use in carrying out the work directly or incidentally involved in the performance of these new duties. Any forms which experience of the working of the Act may show to be necessary or desirable will be issued in due course, but for the present the Board think it expedient to leave considerable latitude, subject to the considerations hereinafter set out, in regard to the particular forms or schedules to be used in different cases or circumstances. The chief difficulties to be considered are administrative rather than educational or scientific. There is comparatively little dispute as to the end in view or as to the means which, from the technical standpoint of medical science and practice, should be adopted for its complete attainment. But the existing resources of local education authorities are (for practical purposes, at all events) not unlimited, the feelings and prejudices of parents have to be considered, and a new element has to be introduced into school life and organisation with the least possible disturbance and inconvenience. Moreover, in this case two departments of local public administration are brought for the first time into organic connexion—those of public health and of public education.

The Board are fully aware of these difficulties, and in preparing their Memorandum and Regulations it was necessary for them to consider what system would best reconcile the theoretical and practical considerations, and overcome the divergence between the ultimate end and the end immediately attainable, or between the methods which are scientifically desirable and those which can be applied in existing circumstances at the initiation of the work under the Act.

In the accompanying schedule the Board indicate the particulars, attention to which they regard as constituting the minimum of efficient medical inspection, and they consider that at least these particulars should be included in any other schedule which the local education authority may authorise for use in their schools. It deliberately excludes many points of anthropometric or statistical interest which are worthy of attention, and which it is hoped may receive attention in suitable districts. Nor does it profess to lay down the lines of a clinical study or of a scientifically complete medical examination. It is intended to indicate the methods which, in the Board's opinion, should be followed and the particulars which should be attended to for the purpose of determining the fitness of the individual child for school life, to guide the authority in adapting education to the peculiarities or abnormalities of the child and to prepare the way for measures for the amelioration of defects in the child or its environment. A more elaborate and complete form could readily be devised, but the Board's knowledge of the circumstances in which the work is to be done leads them to believe that greater elaboration would in the majority of cases defeat its own end.

If this schedule is properly used, few cases of serious physical weakness or defect will escape detection. Where the ordinary inspection shows the need of further and more searching medical examination a supplementary blank form should be used in which particular defects or diseases should be fully recorded. It may facilitate inspection if the schedule is printed on cards (8″ by 5′ or 10″ by 6″). The notes are included in the attached form for the convenience of the school medical officer, and should not be reprinted on the cards. Of course it is not necessary that negative findings on all the points mentioned in the notes should be recorded. It will be noticed that a space is reserved in the schedule for "General Observations"; this may conveniently be used to record a general summary of the condition of the child, and any information which may be available as to the home environment, or other conditions affecting its health. It is considered that the inspection of each child should not occupy on the average more than a few minutes, and that the child need only, as a rule, have its clothes loosened or be partially undressed. Time may be saved in the actual inspection by the medical officer if the entries in some of the spaces are filled in by the school authorities before his visit. The four columns in the schedule are designed for the four inspections required during school life. With regard to items 17 to 24 of the schedule, while it is necessary that all indications of diseased or unsound conditions should be thoroughly investigated, needless medical examination of healthy children should, for obvious reasons, be avoided.

Where children are found to belong to that class of "defectives" for whose education special provision is or ought to be made under the Statutes relating to such children, such cases should be made the subject of a special report to the local education authority.

All entries of the results of inspection in each individual case must be regarded as confidential.

With this circular specimen cards were inclosed which we have already noticed in THE LANCET, but cards will not be supplied with the copies of the circular which are placed on sale.

The following is the schedule accompanying Sir Robert Morant's circular letter to local education authorities:—

SCHEDULE OF MEDICAL INSPECTION.

I.—Name ..... Date of Birth[1] .....

Address ..... School .....

II.—Personal History:

(*a*) Previous Illnesses of Child (before admission).

Measles.	Whooping-cough.	Chicken-pox.	Scarlet fever.	Diph-theria.	Other illnesses.[2]

(*b*) Family Medical History (if exceptional).[3]

—	I.	II.	III.	IV.
1. Date of inspection				
2. Standard and regularity of attendance[4]				
3. Age of child[5]				
4. Clothing and footgear[6]				
[III.—*General conditions.*]				
5. Height[7]				
6. Weight[8]				
7. Nutrition[9]				
8. Cleanliness and condition of skin[10]				
Head				
Body				
[IV.—*Special conditions.*]				
9. Teeth[11]				
10. Nose and throat[12]				
Tonsils				
Adenoids				
Submax. and cervical glands				
11. External eye disease[13]				
12. Vision[14]				
R.				
L.				
13. Ear disease[15]				
14. Hearing[16]				
15. Speech[17]				
16. Mental condition[18]				
[V.—*Disease or Deformity.*][19]				
17. Heart and circulation[20]				
18. Lungs[21]				
19. Nervous system[22]				
20. Tuberculosis[23]				
21. Rickets[24]				
22. Deformities, spinal disease, &c.[25]				
23. Infectious or contagious disease[26]				
24. Other disease or defect[27]				
Medical officer's initials				

General observations.

Directions to Parent or Teacher.

NOTES FOR INSPECTING OFFICER.

1. Date of birth to be stated exactly, date of month and year.

2. "Other illnesses" should include any other serious disorder which must be taken into account as affecting, directly or indirectly, the health of the child in after-life, e.g., rheumatism, tuberculosis,

congenital syphilis, small-pox, enteric fever, meningitis, fits, mumps, &c. The effects of these, if still traceable, should be recorded.

3. State if any case of, or death from, phthisis, &c., in family.

4. Note backwardness.

5. Age to be stated in years and months, thus $5\frac{4}{12}$.

6. Insufficiency, need of repair, and uncleanliness should be recorded (good, average, bad).

7. Without boots, standing erect with feet together, and the weight thrown on heels and not on toes or outside of feet.

8. Without boots, otherwise ordinary indoor clothes.

Height and weight may be recorded in English measures if preferred. n annual report, however, the final averages should be recorded in both English and metric measures.

9. General nutrition as distinct from muscular development or physique as such. State whether good, normal, below normal, or bad. Under-nourishment is the point to determine. Appearance of skin and hair, expression, and redness or pallor of mucous membrane are among the indications.

10. Cleanliness may be stated generally as clean, somewhat dirty, dirty. It must be judged for head and body separately. The skin of the body should be examined for cleanliness, vermin, &c.; and the hair for scurf, nits, vermin, or sores. At the same time ringworm and other skin diseases should be looked for.

11. General condition and cleanliness of temporary and permanent teeth, and amount of decay. Exceptional features, such as Hutchinsonian teeth, should be noted. Oral sepsis.

12. The presence or absence of obstruction in the naso-pharynx is the chief point to note. Observation should include mouth-breathing; inflammation, enlargement, or suppuration of tonsils; probable or obvious presence of adenoids, polypi; specific or other nasal discharge, catarrh, malformation (palate), &c.

13. Including blepharitis, conjunctivitis, diseases of cornea and lens, muscular defects (squints, nystagmus, twitchings), &c.

14. To be tested by Snellen's test types at 20 feet distance (= 6 metres). Result to be recorded in the usual way—e.g., normal V. = 1. Examination of each eye (R. and L.) should, as a rule, be undertaken separately. If the V. be worse than $\frac{6}{9}$, or if there be signs of eye strain or headache, fuller examination should be made subsequently. *Omit vision testing of children under six years of age.*

15. Including suppuration, obstruction, &c.

16. If hearing be abnormal or such as interferes with class work, subsequent examination of each ear should be undertaken separately. *Apply tests only in general way in case of children under six years of age.*

17. Including defects of articulation, lisping, stammering, &c.

18. Including attention, response, signs of overstrain, &c. The general intelligence may be recorded under the following heads: (*a*) bright, fair, dull, backward; (*b*) mentally defective; (*c*) imbecile. *Omit testing mental capacity of children under six years of age.*

19. Under the following headings should be inserted particulars of diseased conditions actually present or signs of incipient disease. The extent of this part of the inspection will largely depend upon the findings under previous headings.

20. Include heart sounds, position of apex beat, anæmia, &c., in case of anything abnormal or requiring modification of school conditions or exercises.

21. Including physical and clinical signs and symptoms.

22. Including chorea, epilepsy, paralyses, and nervous strains and disorders.

23. Glandular, osseous, pulmonary, or other forms.

24. State particular form, especially in younger children.

25. Including defects and deformities of head, trunk, limbs. Spinal curvature, bone disease, deformed chest, shortened limbs, &c.

26. Including any present infectious, parasitical, or contagious disease, or any sequelæ existing. At each inspection the occurrence of any such diseases since last inspection should be noted.

27. Any weakness, defect, or disease not included above (e.g., ruptures) specially unfitting child for ordinary school life or physical drill, or requiring either exemption from special branches of instruction, or particular supervision.

CENTRAL MIDWIVES BOARD.

A MEETING of the Central Midwives Board was held at Caxton House, Westminster, on Feb 13th, Dr. F. H. CHAMPNEYS being in the chair.

Medical Men v. *Midwives.*

The Standing Committee reported that a letter from the clerk of the Council transmitting a copy of a letter from the Local Government Board inclosing a letter from the executive committee of the Rural Midwives Association in regard to the question of the training of midwives, and the possibility of the grant of State aid in respect thereof, had been further considered. A letter from the clerk of the Council transmitting a copy of a memorandum addressed to the Secretary of State for the Home Department by Canon Dobell on the subject of the supply of midwives in rural districts was further considered at the same time. The committee reported that it had considered and settled a reply drafted by the chairman, and recommended that the same be sent to the Privy Council. The Board considered the letter which was discussed without being read *in extenso*. Dr. Champneys, in the course of his remarks, observed that there had been tension between medical practitioners and midwives in many parts of the country for some years. That condition of things must be recognised and a remedy must be found. If practitioners liked to coöperate with midwives more than they did there would be a *modus vivendi* found. Dr. Champneys also said he was not proud of the attitude of a large number of the members of the medical profession in the matter and quoted from a nursing journal some remarks alleged to have been made by a medical practitioner whose name Miss R. Paget said she could produce. Mr. E. Parker Young stoutly maintained that it should be widely known that the Midwives Act was unworkable. The medical profession had on all sides and by all manner of means shown that the Act was unworkable. The remedy was to pay medical men an adequate sum when they were called in on the advice of midwives. The Government must be put in full possession of all the facts of the case. If the Government was going to do any good it must take action in the matter. The Government was greatly to blame for not grappling with the difficulty.

The Board decided to send the letter to the Privy Council and the following is a copy kindly supplied for publication by the Board:—

CENTRAL MIDWIVES BOARD.

Caxton House, Westminster, London, S.W.,
Feb. 15th, 1908.

SIR,—I am directed to advert to your letter of the 12th December, 1907, transmitting a copy of a letter from the Local Government Board inclosing a letter from the executive committee of the Rural Midwives Association in regard to the question of the training of midwives and the possibility of the grant of State aid towards the cost of such training. These matters have now received the careful consideration of the Board and I am to forward to you for the information of the Lord President the observations of the Board on the questions raised in your letter.

With regard to "the number of midwives likely to be available on April 1st, 1910, their distribution in urban and rural districts, to what extent the supply will probably fall short of the requirements, and how the deficiency is to be made good," the Central Midwives Board has not hitherto considered that these questions fall within the scope of the Act, "to secure the better training of midwives and to regulate their practice," although many of its members who are interested in the larger question of the care of the poor mothers of England and their infants have taken part in movements with that object. The Board is, however, glad to do what it can towards the solution of the difficulties, and is earnestly considering the subject with a view to making recommendations at an early date. The returns of the local supervising authorities under Section 8 (5) of the Midwives Act, 1902, are the only data from which the Board can ascertain the approximate number of practising midwives and their distribution in the urban and rural districts. These returns are now coming in, and it is hoped that by March the Board will be in possession of tolerably complete information as to the number of midwives practising in England and Wales at the present time. But in taking these figures as the basis of an estimate of the number likely to be available on April 1st, 1910, it must be remembered that undoubtedly a large number of uncertified women still practise as midwives. There are no means available of ascertaining to what extent the total number of practising midwives will be affected by the fact that these uncertified women will be debarred from legitimate practice after March 31st, 1910.

As regards the opinion of Mrs. Hobhouse quoted in your letter, but not otherwise within the knowledge of the Board, it may be well to inform the Lord President that that lady no doubt refers to the action of the Board in removing the Cottage Nurses' Home, Kingswood, Bristol, from the list of recognised training schools. This institution has neither a visiting nor a resident medical staff and its work is purely extern. It is situated about three miles from Bristol, in which city the Board recognises two training schools, the Royal Infirmary and the General Hospital. Mrs. Hobhouse was interested in the Kingswood Nurses' Home and warmly supported its application for approval as a training school. After considerable discussion the Board granted its approval in March, 1905. Dr. James McMurray was appointed lecturer to the pupil midwives and training was carried on under these conditions until June, 1906. Dr. McMurray then resigned his post and the pupil midwives received their theoretical training from Dr. W. C. Swayne, professor of midwifery at University College, Bristol. This course met with the approval of the Board, but as Dr. Swayne was a recognised teacher there was no longer any necessity for the recognition of the Kingswood Nurses' Home in order to enable training to be carried on there. The Board accordingly, on the revision of the list of training schools in April, 1907, removed the name of Kingswood Nurses' Home. This in no way interferes with the training at the home, which continues under precisely the same conditions as before the name was removed from the list. 21 candidates were sent up from the home while it was a recognised training school. Of these, 13 passed and 8 failed. Since the change was made the number of candidates has been 13, with 11 successes and 2 failures, the percentage of failure falling from 38 to 15.

The opinion as quoted alleges that the Board (*a*) has "raised the standard of examination," (*b*) has "lengthened the syllabus," (*c*) has "refused to recognise several old-established training schools." As regards the first, (*a*), the standard aimed at by the Board has always been strictly limited to such knowledge as it would be dangerous for a midwife to lack. It must be remembered that imperfect instruction is one of the objections alleged against midwives, especially by members of the medical profession. The Board has always endeavoured to restrict the scope of its examinations to this standard, and these are visited by many members of the Board, including the chairman, who makes a rule of being present if possible at every examination. To require less than is now required would not, in the opinion of the Board, be safe. As regard the second, (*b*), "lengthening the syllabus," the Board does not quite understand the meaning of the phrase, as there has been no "syllabus" in existence to lengthen. But possibly it may mean much the same as (*a*), and, in such case, the answer of the Board would be

practically the same. As regards the third, (c), "refusing to recognise several old-established training schools," the Board has, of course, to exercise its discrimination in this matter, and to refuse to recognise institutions which are in its opinion unsuited for this purpose. But, as there appears to be much misunderstanding on this question, it would point out that recognising an institution is not the only way in which an institution can be utilised for training midwives. The practice of the Board has been to approve an institution as a recognised school of training only when its status is such that it may be taken for granted that none but competent officers of all kinds would be appointed to it.

In the case of an institution, such as one of the great lying-in hospitals, for instance, the Board has taken it for granted that it would be properly officered and its officials are recognised *as such* for the purpose of signing Forms III. and IV. Thus, although officials change, the officials for the time being are recognised; when their connexion with the institution ceases their recognition lapses. On the other hand, in the case of an institution less fully equipped the Board has frequently refused to accept it as a "recognised institution," but has approved its medical officer and midwife for the purposes of training midwives and signing Forms III. and IV. Such an institution, though it lacks the prestige of a "recognised institution," has exactly the same opportunities of training midwives as if its request had been granted. In this case the approval of the medical practitioner and midwife are personal. The Board has not received any explanation of the statement that its policy as regards (a), (b), and (c) "has resulted in an increase in the training fees, and a consequential difficulty in obtaining suitable candidates." It is far from its wish to produce any such result, but it feels that the standard on which it has so far insisted cannot be lowered with safety to the community.

It must be remembered that nothing but the three months' course of training, with the attendance on 20 labours and puerperia, stands between what may be absolute ignorance and responsibility of the very gravest and most vital character. Only those who have had, on the one hand, to deal with the raw material, and on the other hand with the same material after training and in face of one of the grave complications of childbirth can fully appreciate the extreme importance of making such training, though strictly limited in scope, as thorough and practical as it can possibly be made. To place upon the roll women whose training had in any way been scamped would be to produce a state of things far worse than that which the Act was framed to abolish; for, whereas before the passing of the Act, the name of midwife carried no official weight, since the passing of the Act the name "certified midwife" carries with it the authority of Parliament and implies that its holder has either been adequately trained, or (in the case of a *bonâ-fide* midwife) has at least avoided conviction for malpraxis and removal from the roll. The Board therefore feels that its present requirements cannot be safely reduced.

The question of subsidising midwives is one of extreme difficulty. It is certain that in some districts midwives are a necessity, yet it is in these very localities that it is difficult for them to earn a living. It is obviously a matter of great delicacy to subsidise a class of persons who are alleged to be in competition with medical practitioners. The Board considers that it must necessarily take some time before an antagonistic attitude can be expected to disappear. In the meanwhile it is of the utmost importance that amicable relations should be encouraged by every possible means, and the Board thinks that this difficulty would be greatly reduced by a scheme by which medical practitioners summoned on the advice of midwives, according to the rules of the Board, could be adequately remunerated. The relations of medical practitioners to midwives vary in different districts; in some they are frankly hostile, the medical practitioners stating that they intend to make it impossible for midwives to practise in their neighbourhood. The Board is not aware of any district in which medical practitioners and midwives coöperate amicably; such districts may, however, exist. It must be remembered that the Board does not receive reports officially on these subjects, and is not in a position to speak with authority. It is possible that a conference could be held with advantage on the subject; if such a conference were held, it would be necessary that it should be thoroughly representative of all interests and that the medical (and especially the rural medical) practitioners should be represented by persons having full authority to speak in their name. The hope of a better understanding must necessarily be preceded by a conviction that "midwives are a necessity" (Report of Select Committee of House of Commons, 1893), and also that midwives, under proper regulation, would act as coöperators and not as opponents. No good would result from such a conference if such delegates were only authorised to demand the abolition of midwives—which might quite possibly be the case.

I am, Sir, your obedient Servant,
G. W. DUNCAN, Secretary.

To the Clerk of the Council, Privy Council Office, Whitehall, S.W.

A letter from Miss B. M. Worrall, honorary secretary of the Midwives Defence Association, as to the action of the local supervising authority for the County of London in regard to Rule E 26, was further considered. This rule is as follows:—

The proper designation of a certified midwife is "certified midwife," thus, e.g., Mary Smith, certified midwife. No abbreviation in the form of initial letters is permitted, nor any other description of the qualification.

Memorials on the subject from the Midwives Institute, and from the committee of the British Lying-in Hospital, the City of London Lying-in Hospital, the General Lying-in Hospital, and Queen Charlotte's Lying-in Hospital were considered at the same time, as well as a letter from Dr. H. Scurfield. The Board decided that the Privy Council should be asked to approve the addition of the following words to Rule E 26:—

Provided that a midwife whose name has been admitted to the roll in virtue of having passed the examination of the Central Midwives Board, or in virtue of a qualification under Section 2 of the Midwives Act, 1902, acquired by passing an examination in midwifery, may add the words "by examination" after the words "certified midwife."

Letters were considered from the Master and the honorary secretary of the Coombe Hospital, Dublin, submitting for the observations of the Board certain rules and regulations adopted by the board of the hospital with respect to the training of pupil midwives. The Board decided that the board of the Coombe Hospital should be referred to the public press for the results of the Board's examinations and that subject to the foregoing the Board expresses general approval of the rules.

IMPRESSIONS OF THE FINAL STAGE OF CHRONIC GLAUCOMA.

BY ONE WHO HAS SUFFERED IT.

SOME six years ago[1] I was privileged to give a patient's account in these columns of the exceedingly difficult eye disease known as chronic glaucoma, or grey atrophy, so far as a two years' endurance of it would allow. Having now reached what the doctors consider, and what I also believe, its final stages I venture to give such fuller impressions as my nearly completed experience permits.

At the period in which the article referred to was written it became necessary to make a special maintenance effort, and I accordingly devised a scheme in which two attainments successfully employed in earlier days were included together with my business as a journalist and advertising expert. As a result an engagement was given me by two or three food manufacturing firms, during which I walked some 1200 miles, visiting the principal towns in Lancashire and Cheshire, delivering in places of entertainment, colleges, and schools lectures on the advantages of blindness and of the foods alluded to. The walk was accomplished in July, August, and September, my 12-years-old son acting as guide. On most days the evening lecture obliged me to walk in evening dress and a high hat, as there was seldom much time after the day's journey to get ready for the platform. On the whole, the long outdoor exercise seemed to benefit my general health, but it was certainly a considerable strain to grope through unknown buildings and up strange stairways to finally attempt the still more difficult task of interesting an unseen audience, and, if possible, make them laugh. At the conclusion of the expedition there was, in addition to a slight financial gain, an apparent increase in bodily strength, while the gout and nerve pains long suffered appeared to have been got rid of entirely.

A year afterwards, however, the atrophy began to extend over the body, and in January of last year while in the streets I found myself at a full stop owing to a contraction of the leg muscles and had to be carried home to the bed from which I now write. Dr. E. Annacker of Manchester and Dr. J. G. Christie of Longsight attended me and watched the progress of the malady with the skilled practitioner's, and also perhaps the student's, eye. The loss of vitality is apparent in all parts of the body and the nerve pains have returned. Dr. Christie has probed the legs, arms, chest, &c., with a lancet to what he knows would be pain-point in a person of ordinary sensitiveness and has pinched the neck muscles with full force without causing the slightest feeling of pain. Somewhat restless sleep and an appetite apparently ravenous but quickly satisfied, inability to use the legs, and a curious sinking of the nerves as if one of the spasms of a shivering fit had been abnormally prolonged, are the chief peculiarities of my present condition.

Concerning the eyes, there is an increasing in frequency of the phantasmagoria apparent from the first stage of the disease. When the eyes are closed and bandaged and the room is dark a red patch or stage sometimes slightly bordered with a dark blue appears before me. On this surface appear, always coming from the right side, figures, human as well as fanciful, which engage in a kind of kinematograph action. These figures are now invariably speckled with snowflakes, which also cover part of the stage. It requires a strong will and a change of the position of the body to drive away the illusion, if such it be. In thinking the matter carefully out I account for the red stage by the red lining of the eyelid, for the blue fringe by the fact that this is the colour of the eyes, and for the flakes by the

[1] THE LANCET, April 5th, 1902, p. 984.

scattering of the drop of moisture which, I understand, the closing of the lid brings on to the eye. For the figures themselves, most of which are wholly new to me, I can offer no more explanation than for those which come in dreams.

Having lost one sense and suffered diminution of others a man may feel some misgivings as to intellectual power and consequently I consulted an expert who is among my bedside visitors on this matter. To him I recited Prop. 5 of the First Book of Euclid, the wooden horse episode from Virgil commencing "Timeo Danaos," and also excerpts from poets, politicians bygone and present, and also answered his questions. In the end he seemed to consider that the mind was quite clear and the memory unusually so.

Both the doctors attending me agree that the spinal cord is affected and that this is due to over-exertion. Both of them have large experiences and practices, and have further told me that the reason of my lasting out so well is largely due to the cheerful view I have taken of what is considered a singularly distressing situation. This testimony as to the value of cheerfulness makes me desirous to use the gift, if possible, in aid of fellow-sufferers and to suggest that the patient, no matter how great the pain he suffers, has a duty to the medical man and to the nurse who may be attending him. Both of these have their own share of human ills to suffer and it does not require great intelligence to understand that a harassed and often overworked medical man finds it a great effort to conjure up the pleasant and hopeful smile with which he usually meets his patients. The sight of a man or woman making a good effort to be patient under extreme pain and to show some slight consideration for those around them has a beneficial effect on all who witness it and was the last lesson taught from Calvary. Perplexed and grievously assailed by misgivings as a man must be who struggles for a living in the dark, the writer has never doubted the advice given him by one who has been honourably mentioned in THE LANCET—to try to get some good out of the malady for himself and others. Neither has he doubted that the Hand which struck the blow gave also the ability to take it cheerfully.

As a press reporter and in another capacity I have frequently heard the medical opinion that a strong faith, however rugged, in the unfailing goodness of the Creator greatly helps the sick to bear pain patiently and even to meet death smilingly. Such a belief, then, must necessarily greatly help the medical man in his beneficent work and for this reason alone, if for no other, is worth fostering. It is a belief coming through home and school education, both of which institutions are necessary to the proper teaching of religion. From a forecast of the Education Bill shortly to be introduced it is clear that if it becomes law most of our children will stand a great risk of being deprived of this curative and comforting belief. It seems fit, therefore, that one who greatly honours the medical profession and has so often witnessed the good done by its members should entertain a strong hope that they will find the time to object to any attempt being made to make the bed of the sick and dying less comfortable.

MEDICINE AND THE LAW.

Voice-Production.

AFTER a prolonged hearing an action has been concluded in which a plaintiff named Horspool sued Dr. W. H. Cummings, president of the Incorporated Society of Musicians and principal of the Guildhall School of Music, for slander. Mr. Horspool claims, or claimed, to have devised a system of voice-production for singers and is the managing director with a salary of £1000 a year of a company (joined with him as plaintiffs in the action) formed for the carrying out of his system, the advertisements of which company had formed the subject of forcible observations by Dr. Cummings at a meeting of the Incorporated Society of Musicians at Buxton in January, 1907. The gist of Dr. Cummings's observations may be gathered from that portion of the plaintiff's statement of claim, which said that the words spoken meant "that Mr. Horspool was an impudent quack and that he had duped and imposed upon the public and that he carried on a fraudulent and dishonest business." The defence resolved itself into the question whether the words used were "fair comment upon a matter of public importance." The judge ruled that the matter was one of public importance and the jury, satisfied that the comment was fair, found a verdict for the defendant who is to be congratulated upon the result thus achieved. The methods adopted by the plaintiff with a view to produce perfection in the singing voices of those desirous of attaining such perfection need not be recapitulated, but it is interesting to note the use made by him of the fact that he had submitted 20 of his pupils to examination by Mr. Milsom Rees before and after they had been under his tuition. He claimed that Mr. Rees had been struck with astonishment at his discovery, saying, "It is wonderful. What you have shown me would surprise a layman, but it is even more extraordinary to a doctor." In spite of this alleged admiration on the part of a medical witness whose evidence, if favourable, would have been of considerable value to him, the plaintiff did not call Mr. Rees as a witness, but the defendant's legal advisers, with what Mr. Justice Darling described as "an amount of courage which some advocates would consider recklessness," had served him with a subpœna, and calling him into the witness-box proceeded to examine him without having any "proof" of what answers he would give to their questions. The bold course thus taken was justified, for in the circumstances the plaintiff and his counsel could not do otherwise than absolve the witness from any obligation of professional reticence without laying themselves open to inferences which would have been almost as damaging as the evidence actually given. Mr. Rees had no recollection of having ever expressed wonder or admiration, and his evidence must have contributed not inconsiderably to the defendant's ultimate success. As a matter of fact, the result of his second examination had been to show that in three cases out of the 20 there had been rupture of the ligaments of the vocal cords due apparently to excessive tension produced by the plaintiff's methods, and he was able to point out various absurdities in the measures alleged to have been adopted for cultivating the voice, some of them based upon ideas as to the anatomy of the organs involved which he characterised tersely as bosh. Expert evidence was also given on behalf of the defendant by Mr. H. H. Hulbert, lecturer on voice-production to the London County Council and at the University of London. His testimony, and also that of Mr. Rees so far as it consisted of expert evidence, was directed towards pointing out the absurdity of the plaintiff's promise to produce results in themselves impossible and to explaining that it was equally impossible that the treatment which he professed to apply should have any effect approximating to that which he claimed for it. A feature in the case frequently to be observed in trials of a similar character consisted in the calling of witnesses who, no doubt in good faith, testified to benefits which, they alleged, had been derived by them from the treatment advertised. It is, however, natural that those who fancy that they have been benefited should proffer their evidence rather than that those who believe themselves to have been deceived by false hopes should come forward and admit their aspirations and their disappointment.

ASYLUM REPORTS.

Roxburgh, Berwick, and Selkirk District Asylum (Annual Report from May, 1906, to May, 1907).—On May 15th, 1906, there were on the register of this asylum 331 patients (149 males and 182 females), including both private and parish cases. During the year 74 patients (47 males and 27 females) were admitted, and of these 11 were private patients. Dr. J. Carlyle Johnstone, the medical superintendent, reports that on the completion of the extensions and alterations which are at present being carried out in the asylum there will be ample accommodation for all cases of insanity occurring in the district for the care and treatment of which a reasonable sum can be paid and for a considerable number of persons of moderate means from other counties. £40 a year is the rate charged for private patients from the district and £45 for cases from other parts of the country; but patients in straitened circumstances who are settled in the district are received at lower rates when satisfactory proof is furnished that the full rate cannot be paid. Hereditary predisposition to mental disorder was found to exist in 43 of the cases admitted. The physical condition of the patients was good or average in 11 per cent., bad in 82 per cent., and very bad in 7 per cent., more than

half the cases suffering from some form of physical disease for which medical treatment was required. 25 of the cases admitted were over 60 years of age. One of the patients admitted was a woman who had pleaded guilty at her trial for the wilful murder of her two infant children and was sent to the asylum under Section 15 of the Act 25 & 26 Vict., cap. 51. The medical superintendent, in reference to this case, writes as follows: "No opinion is expressed here as to the regularity of the legal procedure followed in this case, but a protest must be raised against what appears to be a growing tendency to make use of asylums as convenient houses of detention for dangerous criminals. The modern asylum is essentially a hospital; its arrangements are not designed to meet the requirements of a gaol, and, in so far as its conditions are made to resemble those of a prison, its efficiency as a hospital must suffer. It is most unfair that respectable members of a community sent to the institution for medical treatment should be forced into association with malefactors and murderers and the presence of such persons in the wards is keenly resented by the patients." 38 patients were discharged during the year, 26 (11 males and 15 females) as "recovered," 11 (six males and five females,) as "relieved," and one woman as "not improved." The recoveries as compared with the admissions give a proportion of 35·1 per cent. (23·4 males and 55·5 females). In 80·7 per cent. of the recoveries the mental disorder was of less than three months' duration on the patient's admission into the asylum. The number of deaths (38) is the highest recorded since the opening of the institution. The rate of mortality calculated on the average number on the register was 11·5 (10·2 males and 12·7 females), but Dr. Johnstone states that examination shows that there is nothing alarming in the high figures, which must be regarded as purely accidental. Pulmonary tuberculosis was present in active form in 28·9 per cent. of the deaths. The medical superintendent draws attention once more to the fact that the legislature has not yet made any provision for the granting of retiring allowances to the staffs of the Scottish district and parochial asylums. Statutory power has been given to grant more or less adequate pensions to the officials of the English county and borough asylums, the Irish district asylums, and the Scottish Royal asylums. Scottish asylum workers have exactly the same kind of duties to perform and they run the same risks as the employees in other asylums. They receive no compensation for the lack of pensions in the shape of higher wages and salaries or otherwise, their remuneration being such as to render it impossible for them to make adequate provision for old age or infirmity; and it is well known that of all public employments asylum service is the most anxious and responsible and the most dangerous to the health of body and mind. The new female wing of the asylum was opened on Nov. 26th, 1906, and the Commissioner in Lunacy, Dr. J. Fraser, states in his report that it is of a highly satisfactory character and suitably and comfortably furnished. He further draws attention in his report to the excellence of the two hospital sections for sick and infirm patients, and to the great advantage that the asylum derives from having four certificated hospital nurses, the matron, the deputy matron, the assistant matron on duty in the male sick ward, and the assistant matron who acts as night superintendent. The present rate of board for pauper patients is £29 per annum. The garden account shows a favourable balance of £189.

Leicester Borough Asylum (*Annual Report, 1906–07*).—On Jan. 1st, 1906, there were 815 patients (350 males and 465 females) on the registers of this asylum. The admissions during the year were 221 (85 males and 136 females). Dr. J. E. M. Finch, the medical superintendent, reports that the number of admissions from Leicester itself of both sexes, but especially of males, has been higher during 1906 than in any former year, the admission rate for the previous four years having been stationary. He further adds that should this increase continue more accommodation on the male side will be necessary, though there will be ample room on the female side for several years. Amongst those admitted, insane inheritance was found to be present in 50 instances, intemperance in 21, domestic trouble in 18, congenital defects in nine, and senile decay in 13. During the year 122 patients (57 males and 65 females) were discharged and of these 82 (32 males and 50 females) were considered "recovered," 21 (nine males and 12 females) "relieved," and 19 (16 males and three females) "not improved." In the discharges the percentage of the recoveries on the admissions, excluding those cases transferred from other asylums, is found to be 38·1 in the males and 47·6 in the females. The deaths during the same period were 74 (38 males and 36 females), which gives a rate of mortality estimated on the average number of patients resident in the asylum of 10·9 in the males and 7·3 in the females. The chief causes of death were general paralysis in 13 cases, other cerebral lesions in 12, cancer in three, pulmonary tuberculosis in five, heart disease in 16, and senile decay in eight. Of the 840 patients remaining in the asylum at the end of the year 1906-29 (12 males and 17 females) were deemed to be curable. The total number of epileptic patients under treatment was 128. There were several changes during the year in the staff of the asylum. Amongst the medical officers, the second assistant medical officer unfortunately met with a fatal accident while cycling, and Mr. C. H. Gibson Lyall has been appointed to take his place. Dr. Finch reports many changes among the members of the nursing staff, and the Commissioners note in their report that the duration of service, although as good as in many asylums, cannot be considered satisfactory in view of the fact that 27 per cent. have served less than one year. During the winter the usual lectures on ambulance and nursing have been given, 14 attendants and 19 nurses obtaining the certificate and two attendants and nine nurses the medallion.

Looking Back.

FROM

THE LANCET, *SATURDAY*, Feb. 20th, 1830.

M. CHABERT.[1]

THE following note was received by the EDITOR on Monday last; can any of our Correspondents suggest an appropriate reply? If M. Chabert has no antidote for prussic acid, it is quite evident that he has impudence enough for anything.

"M. Chabert requests Mr. Wakley will give him that satisfaction which is due to a gentleman, for the recent unprovoked, malicious, and unjust attacks against his character."

Saturday noon, Thomas Street,
Waterloo Road, Lambeth.
T. Wakley, Esq., Bedford Square.

[1] Vide "Looking Back" in THE LANCET of Jan. 18th, p. 178, Feb. 1st, p. 383, and Feb. 8th, 1908, p. 435.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8648 births and 5798 deaths were registered during the week ending Feb. 15th. The mean annual rate of mortality in these towns, which had been equal to 18·2 and 18·3 per 1000 in the two preceding weeks, showed a further slight increase to 18·6 in the week under notice. During the first seven weeks of the current quarter the annual death-rate in these towns averaged 18·5 per 1000; the rate in London during the same period did not exceed 18·1. The lowest annual death-rates in the 76 towns last week were 6·0 in King's Norton, 6·9 in Hastings, 7·9 in Hornsey, and 10·2 in Grimsby; the rates in the other towns ranged upwards to 25·5 in Stockton, 25·8 in Rochdale, 26·3 in Merthyr Tydfil, and 31·4 in Yarmouth. The rate in London last week did not exceed 19·0. The 5798 deaths registered in the 76 towns during the week under notice showed an increase of 106 upon the number in the previous week, and included 388 which were referred to the principal epidemic diseases, against 441 and 447 in the two previous weeks; of these, 154 resulted from whooping-cough, 78 from measles, 47 from diphtheria, 43 from diarrhœa, 40 from scarlet fever, and 26 from "fever" (principally enteric), but not one from small-pox. The deaths from these epidemic diseases in the 76 towns were equal to an annual rate of 1·2 per 1000, the rate from the same diseases in London being 1·1. No death from any of these epidemic diseases was registered last week in Tottenham, St. Helens, Wigan, King's Norton, or in eight other smaller towns; the annual death-rates

from these diseases in the other towns ranged upwards, however, to 2·9 in Oldham, 3·1 in Hanley, 3·3 in Sunderland, and 4·7 in Merthyr Tydfil. The fatal cases of whooping-cough in the 76 towns, which had been 190 and 192 in the two preceding weeks, declined last week to 154; they caused annual death-rates, however, equal to 1·8 in Oldham, 1·9 in Aston Manor, 2·1 in Ipswich, 2·5 in Rotherham, and 3·0 in Sunderland. The 78 deaths from measles exceeded the number in the previous week by seven; the highest rates from this disease were 1·1 in Salford and in Swansea, 1·5 in Hanley, and 2·7 in Merthyr Tydfil. Of the 47 fatal cases of diphtheria, showing a considerable decrease from the numbers in recent weeks, 18 occurred in London and its suburban districts, five in Manchester and Salford, and three in Cardiff. The 40 deaths from scarlet fever included 16 in London, two in West Ham, three in Liverpool, and four in Manchester and Salford. The 26 deaths referred to "fever" showed a slight increase; the four fatal cases in Norwich were equal to an annual rate of 1·7 per 1000. The number of scarlet fever patients under treatment in the Metropolitan Asylums and London Fever Hospitals, which had steadily declined in the ten preceding weeks from 5581 to 3867, had further fallen to 3806 on Feb. 15th; during the week ending on that day 473 new cases were, however, admitted to these hospitals, against 380, 405, and 433 in the three previous weeks. The deaths in London referred to pneumonia and other diseases of the respiratory organs, which had declined in the four preceding weeks from 499 to 395, rose again to 451 in the week under notice, and exceeded by 79 the corrected average number in the corresponding week of the five years 1903–07. The causes of 59, or 1·0 per cent., of the deaths registered in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Leeds, Bristol, West Ham, Manchester, Salford, and in 44 other smaller towns. Ten uncertified causes of death were, however, registered in Birmingham and in Liverpool, and three each in Sheffield, Gateshead, and Tynemouth.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been equal to 22·3 and 23·5 per 1000 in the two preceding weeks, declined to 21·4 in the week ending Feb. 15th, but exceeded by 2·8 the mean rate during the same week in the 76 English towns. Among the eight Scotch towns the death-rates ranged from 14·3 and 17·4 in Aberdeen and Greenock, to 22·9 in Glasgow and 29·6 in Perth. The 755 deaths in these eight towns showed a decline of 72 from the high number returned in the previous week, and included 114 which were referred to the principal epidemic diseases, against 142, 123, and 132 in the three preceding weeks; of these, 55 resulted from measles, 18 from whooping-cough, 18 from diarrhœa, eight from "fever," eight from diphtheria, seven from scarlet fever, but not one from small-pox. These 114 deaths were equal to an annual rate of 3·2 per 1000, which exceeded by no less than 2·0 the mean rate last week from the same diseases in the 76 English towns. The 55 fatal cases of measles showed a decline of nine from the number returned in each of the two previous weeks, and included 47 in Glasgow and three in Edinburgh and in Aberdeen. Of the 18 deaths from whooping-cough, fewer by 14 than those in the previous week, 11 were returned Glasgow and two both in Edinburgh and in Leith. The 18 deaths attributed to diarrhœa exceeded the numbers in recent weeks; 11 occurred in Glasgow, two in Dundee, and two in Leith. Of the eight deaths referred to "fever," seven were certified as cerebro-spinal meningitis and one as enteric fever; these eight deaths included five in Glasgow, two in Paisley, and one in Edinburgh. Five of the eight fatal cases of diphtheria were returned in Glasgow; and the seven deaths from scarlet fever included three in Glasgow and two in Paisley. The deaths referred to diseases of the respiratory organs in these eight towns, which had been 179 and 171 in the two preceding weeks, rose again to 176 in the week under notice, and exceeded by seven the number from the same diseases in the corresponding week of last year. The causes of 28, or 3·7 per cent., of the deaths in these towns last week were not certified or not stated; in the 76 English towns the proportion of these uncertified deaths last week did not exceed 1·0 per cent.

HEALTH OF DUBLIN.

The annual rate of mortality in Dublin, which had declined in the four preceding weeks from 31·2 to 22·3 per 1000, rose again to 24·7 in the week ending Feb. 15th. During the first seven weeks of the current quarter the death-rate in the city averaged 26·4 per 1000, whereas the mean rate during the same period did not exceed 18·1 in London and 19·7 in Edinburgh. The 187 deaths of Dublin residents registered last week showed an increase of 18 upon the number in the previous week, and included three which were referred to the principal epidemic diseases, against nine, six, and four in the three preceding weeks; these three deaths included one each from measles, diphtheria, and whooping-cough, no death being registered either from scarlet fever, "fever," diarrhœa, or small-pox. These three deaths from epidemic diseases were equal to an annual death-rate of but 0·4 per 1000, the death-rate from the same diseases last week being 1·1 in London and 1·3 in Edinburgh. The 187 deaths from all causes in the city last week included 30 of infants under one year of age and 60 of persons aged upwards of 60 years; the deaths of infants showed an increase, while those of elderly persons were fewer than in any recent week. Four inquest cases and four deaths from violence were registered during the week, and 76, or 40·6 per cent., of the deaths occurred in public institutions. The causes of six, or 3·2 per cent., of the deaths in the city last week were not certified; in London the causes of all but two of the 1752 deaths last week were duly certified, while in Edinburgh the proportion of uncertified deaths was 3·6 per cent.

VITAL STATISTICS OF LONDON DURING JANUARY, 1908.

IN the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious disease it appears that the number of persons reported to be suffering from one or other of the nine diseases specified in the table was equal to an annual rate of 8·4 per 1000 of the population, estimated at 4,795,757 persons in the middle of the year; in the three preceding months the rates were 13·6, 11·4, and 9·1 per 1000 respectively. The lowest rates last month were recorded in Paddington, Kensington, Chelsea, the City of Westminster, St. Marylebone, Hampstead, and the City of London; the highest rates were Hackney, Bethnal Green, Stepney, Poplar, Bermondsey, and Deptford. The prevalence of scarlet fever again showed a marked decline last month; among the various boroughs this disease was proportionally most prevalent in Hackney, Bethnal Green, Stepney, Poplar, Bermondsey, Camberwell, and Deptford. The Metropolitan Asylums hospitals contained 3866 scarlet fever patients at the end of last month, against 5395, 5600, and 4956 at the end of the three preceding months; the weekly admissions averaged 423, against 778, 621, and 458 in the three preceding months. The prevalence of diphtheria showed no variation from that recorded in the previous month; this disease was proportionally most prevalent in Stoke Newington, Hackney, Bethnal Green, Wandsworth, Greenwich, Lewisham, and Woolwich. The number of diphtheria patients remaining under treatment in the Metropolitan Asylums hospitals at the end of last month was 1135, against 1252, 1277, and 1168 at the end of the three preceding months; the weekly admissions averaged 150, against 199, 179, and 155 in the three preceding months. Enteric fever was considerably less prevalent than it had been in any of the four preceding months; the greatest proportional prevalence of this disease was recorded in Hammersmith, Chelsea, Holborn, Bethnal Green, Poplar, and Bermondsey. There were 96 enteric fever patients under treatment in the Metropolitan Asylums hospitals at the end of last month, against 123, 128, and 119 at the end of the three preceding months; the weekly admissions averaged 12, against 18 in each of the two preceding months. Erysipelas was proportionally most prevalent in Fulham, Hackney, Bethnal Green, Stepney, Poplar, and Bermondsey. The 19 cases of puerperal fever notified during the month included two in Bethnal Green and three each in Shoreditch, Stepney, and Wandsworth. Ten cases of cerebro-spinal meningitis were notified, of which two belonged to Hackney, two to Lambeth, and one each to St. Marylebone, Islington, Stoke Newington, Finsbury, Poplar, and Southwark.

The mortality statistics in the table relate to the deaths

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING JANUARY, 1908.

(Specially compiled for THE LANCET.)

Cities and Boroughs.	Estimated population in the middle of 1908.	Notified Cases of Infectious Disease.											Deaths from Principal Infectious Diseases.										Deaths from all causes.	Death-rate per 1000 living.	Deaths of infants under one year to 1000 births.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Typhus fever.	Enteric fever.	Other continued fevers.	Diarrhœa.	Total.	Annual rate per 1000 persons living.			
LONDON	4,795,757	1	2309	916	—	118	1	19	472	10	3846	8·4	—	129	83	118	140	—	16	1	80	567	1·2	8030	17·5	115
West Districts.																										
Paddington	150,923	—	37	15	—	4	—	—	7	—	63	4·4	—	12	2		1	—	—	—	1	20	1·4	251	17·3	128
Kensington	182,752	—	21	43	—	3	—	—	18	—	85	4·9	—	10	—	5	—	—	—	—	1	16	0·9	313	17·9	149
Hammersmith	124,012	—	51	15	—	11	—	1	9	—	87	7·3	—	2	2	—	—	—	—	—	2	6	0·5	227	19·1	130
Fulham	171,562	—	98	41	—	1	—	—	20	—	160	9·7	—	8	4	2	3	—	1	—	3	21	1·3	235	14·2	131
Chelsea	75,049	—	11	11	—	3	—	—	5	—	30	4·2	—	1	2	—	4	—	—	—	2	9	1·3	133	18·5	120
City of Westminster	170,545	—	48	19	—	2	—	—	10	—	79	4·8	—	2	—	2	1	—	2	—	3	10	0·6	241	14·7	123
North Districts.																										
St. Marylebone	126,867	—	17	13	—		—	—	14	1	48	3·9	—	—	—	3	5	—	—	—	1	9	0·7	226	18·6	63
Hampstead	92,654	—	33	7	—	—	—	—	2	—	42	4·7	—	1	—	1	—	—	—	—	—	2	0·2	99	11·1	121
St. Pancras	237,075	1	97	41	—	2	—	1	13	—	155	6·8	—	14	1	3	10	—	1	—	1	30	1·3	439	19·3	134
Islington	349,091	—	120	68	—	6	—	1	33	1	229	6·8	—	8	4	11	2	—	2	—	5	32	1·0	550	16·4	115
Stoke Newington	54,015	—	12	13	—		—	1	4	1	32	6·2	—	2	—	—	2	—	—	—	—	4	0·8	83	16·0	63
Hackney	235,253	—	166	59	—	6	—	—	33	2	266	11·8	—	8	9	12	5	—	—	—	6	40	1·8	405	18·0	120
Central Districts.																										
Holborn	54,466	—	17	6	—	3	—	—	3	—	29	5·6	—	2	—	4	3	—	1	—	—	10	1·9	126	24·1	67
Finsbury	96,007	—	46	14	—	2	—	—	11	1	74	8·0	—	2	1	4	3	—	2	—	3	15	1·6	224	24·3	122
City of London	19,252	—	4	3	—	—	—	—	1	—	8	4·3	—	1	—	1	—	—	—	—	—	2	1·1	40	21·7	100
East Districts.																										
Shoreditch	115,227	—	52	17	—	2	—	3	6	—	80	7·2	—	3	5	1	1	—	—	—	4	14	1·3	248	22·4	129
Bethnal Green	131,066	—	75	38	—	12	—	2	37	—	164	13·0	—	7	6	4	2	—	1	—	1	21	1·7	269	21·4	126
Stepney	310,706	—	221	70	—	9	1	3	47	—	351	11·8	—	15	7	7	22	—	1	1	4	57	1·9	571	19·2	112
Poplar	171,516	—	163	32	—	7	—	1	27	1	231	14·0	—	8	5	3	10	—	1	—	8	35	2·1	342	20·8	133
South Districts.																										
Southwark	210,442	—	76	27	—	6	—	—	20	1	130	6·4	—	2	2	7	7	—	—	—	9	27	1·3	391	19·4	108
Bermondsey	127,910	—	93	24	—	6	—	—	21	—	144	11·7	—	2	5	3	5	—	1	—	4	20	1·6	269	21·9	150
Lambeth	321,344	—	191	37	—	3	—	1	25	2	259	8·4	—	2	8	3	2	—	—	—	6	21	0·7	500	16·2	99
Battersea	183,873	—	82	42	—	2	—	—	20	—	146	8·3	—	8	4	3	9	—	—	—	3	27	1·5	291	16·5	126
Wandsworth	289,506	—	173	75	—	10	—	3	24	—	285	10·3	—	1	4	8	12	—	1	—	6	32	1·2	420	15·1	95
Camberwell	280,022	—	163	43	—	4	—	1	16	—	227	8·5	—	1	7	7	7	—	1	—	1	24	0·9	399	14·9	99
Deptford	117,539	—	92	20	—	3	—	—	16	—	131	11·6	—	—	—	1	6	—	—	—	3	10	0·9	199	17·7	128
Greenwich	109,110	—	37	31	—	1	—	—	12	—	81	7·7	—	—	2	2	8	—	—	—	2	14	1·3	152	14·5	114
Lewisham	156,627	—	61	50	—	5	—	—	9	—	125	8·3	—	5	2	12	6	—	—	—	1	26	1·7	209	13·9	99
Woolwich	131,346	—	52	41	—	1	—	1	9	—	104	8·3	—	2	1	5	4	—	1	—	—	13	1·0	178	14·1	91
Port of London	—	—	—	1	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

of persons actually belonging to the various boroughs, the deaths occurring in institutions having been distributed among the several boroughs in which the deceased had previously resided. During the five weeks ending Feb. 1st the deaths of 8030 persons belonging to London were registered, equal to an annual rate of 17·5 per 1000; in the three preceding months the rates were 13·5, 14·5, and 15·2 per 1000 respectively. The lowest death-rates last month were 11·1 in Hampstead, 13·9 in Lewisham, 14·1 in Woolwich, 14·2 in Fulham, 14·5 in Greenwich, and 14·7 in the City of Westminster; the highest rates were 20·8 in Poplar, 21·4 in Bethnal Green, 21·7 in the City of London, 21·9 in Bermondsey, 22·4 in Shoreditch, 24·1 in Holborn, and 24·3 in Finsbury. The 8030 deaths from all causes included 567 which were referred to the principal infectious diseases; of these, 129 resulted from measles, 83 from scarlet fever, 118 from diphtheria, 140 from whooping-cough, 16 from enteric fever, one from ill-defined pyrexia, and 80 from diarrhœa. The lowest death-rates last month from these diseases were recorded in Hammersmith, the City of Westminster, Hampstead, St. Marylebone, Stoke Newington, and Lambeth; and the highest rates in Hackney, Holborn, Finsbury, Bethnal Green, Stepney, Poplar, Bermondsey, and Lewisham. The 129 deaths from measles were 54 below the corrected average number in the corresponding periods of the five preceding years; this disease was proportionally most fatal last month in Paddington, Kensington, Fulham, St. Pancras, Stepney, and Poplar. The 83 fatal cases of scarlet fever were 34 in excess of the corrected average number; among the various boroughs this disease showed the greatest proportional mortality in Hackney, Shoreditch, Bethnal Green, Poplar, and Bermondsey. The 118 deaths from diphtheria were 41 above the corrected average number in the first five weeks of the years 1903–07; this disease was proportionally most fatal in Hackney, Holborn, Finsbury, the City of London, and Lewisham. The 140 fatal cases of whooping-cough were 65 fewer than the corrected average number; among the various boroughs the highest death-rates from this disease were recorded in Chelsea, St. Pancras, Holborn, Stepney, Poplar, Battersea, Wandsworth, Deptford, and Greenwich. The 17 deaths referred to "fever" were 13 below the corrected average number; of these 17 deaths two belonged to the City of Westminster, two to Islington, two to Finsbury, two to Stepney, and one to each of nine other boroughs. The 80 fatal cases of diarrhœa corresponded with the average number; this disease was proportionally most fatal in Finsbury, Shoreditch, Poplar, Southwark, and Bermondsey. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was 9 per cent. below the average.

Infant mortality, measured by the proportion of deaths among children under one year of age to registered births, was equal to 115 per 1000. The lowest rates of infant mortality were recorded in St. Marylebone, Stoke Newington, Holborn, Lambeth, Wandsworth, Camberwell, Lewisham, and Woolwich; and the highest rates in Kensington, Hammersmith, Fulham, St. Pancras, Poplar, and Bermondsey.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

IN accordance with the provisions of Her late Majesty's Order in Council of April 1st, 1881, Surgeon Francis Edwin McCune has been placed on the retired list (dated Jan. 23rd, 1908).

The following appointments are notified:—Fleet Surgeon F. J. A. Dalton, to the *President*, additional, for R.F.A. *Maine;* Staff Surgeon E. S. Reid, to the *President*, additional, for R.F.A. *Maine;* Surgeon C. T. Baxter, to the *President*, additional, for R.F.A. *Maine*.

ARMY MEDICAL SERVICE.

Lieutenant-Colonel Fitzroy B. Maclean, from the Royal Army Medical Corps, to be Colonel, vice J. F. Williamson, C.B., C.M.G., retired (dated Feb. 6th, 1908).

ROYAL ARMY MEDICAL CORPS.

Major F. M. Maugin has been posted to the Connaught Hospital, North Camp, Aldershot for duty. Captain W. L. Baker has joined at Aldershot and been posted to the Connaught Hospital for duty. Lieutenant M. J. Cromie has been transferred from Mhow to Jubbulpore for permanent duty.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Arthur H. Vernon to be Surgeon-Major (dated Feb. 1st, 1908).

IMPERIAL YEOMANRY.

Lancashire Hussars: Surgeon-Lieutenant J. T. Nisbe to be Surgeon-Captain (dated Jan. 24th, 1908).

VOLUNTEER CORPS.

Royal Garrison Artillery (Volunteers): 1st Berwickshire: Irvine Kempt Hermon to be Surgeon-Lieutenant (dated Jan. 17th, 1908). 1st Durham; William George Thompson to be Surgeon-Lieutenant (dated Jan. 1st, 1908). Frank Wilfred Burn to be Surgeon-Lieutenant (dated Jan. 3rd, 1908).

Rifle: 2nd Volunteer Battalion, The Prince Albert's (Somersetshire Light Infantry): Arthur Norman Haig to be Surgeon-Lieutenant (dated Jan. 14th, 1908). 2nd Volunteer Battalion, The Welsh Regiment: Surgeon-Major J. A. Jones to be Surgeon-Lieutenant-Colonel (dated Jan. 29th, 1908). 13th Middlesex (Queen's Westminster) Volunteer Rifle Corps: Surgeon-Major and Honorary Surgeon-Lieutenant-Colonel P. P. Whitcombe to be Surgeon-Lieutenant-Colonel (dated August 7th, 1907).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Western Command: Manchester Companies: Thomas Carnwath to be Lieutenant (dated Jan. 28th, 1908).

TUBERCULOSIS IN THE ARMY.

In the House of Commons on Feb. 18th, in reply to a question by Mr. Summerbell regarding the action which the Secretary of State for War proposed to take with reference to soldiers suffering from tuberculosis, in view of the findings of the Select Committee appointed to go into the matter, Mr. Haldane said that the recommendations of the Select Committee had been recently considered by the Government. The decision was that, however desirable the special provision recommended by the Committee in the case of soldiers discharged from the army because of tuberculosis, it was impossible to justify the assumption of this new kind of obligation by the State unless it is extended to other services as well as the army, and possibly more widely still.

Correspondence.

"Audi alteram partem."

THE LONDON COUNTY COUNCIL AND THE TREATMENT OF SCHOOL CHILDREN.

To the Editor of THE LANCET.

SIR,—You are doubtless aware that the London County Council has caused its Education Committee to appoint a special subcommittee consisting of members of the Council and representatives of outside institutions to inquire into the whole question of the medical treatment of children attending public elementary schools. This subcommittee has been formed and it may be stated at once that the London hospitals, including the Hospitals for Sick Children, are wholly inadequately represented upon it. Under the Education (Administrative Provisions) Act, 1907, the Council has powers to make such arrangements as may be sanctioned by the Board of Education for attending to the health and physical condition of these children. The Education Committee of the Council has issued to the London hospitals a series of questions which indicate the extensive nature of its investigation, the diseases including those of the eye, ear, skin, teeth, malnutrition, &c. There is considerable danger that these questions may be answered without due appreciation of the far-reaching effects of any scheme which may be instituted. It need only be mentioned that school clinics cannot be established without enormous expense and without injury to the hospital clinics; or, if the additional work is thrown upon the hospitals, they will have to bear the increased expense. In the former case, and in the latter also, if the hospitals are subsidised (of which there is no suggestion) the ratepayers will have to

bear the burden. Judging by the examination of school children for diseases of the eye, which is already in force, no attempt will be made to ascertain whether the parents are in a position to pay, however inadequately, for advice. If the scheme is extended to include diseases of the skin, general debility, &c., general medical practitioners must inevitably suffer severely.

I have been led to trouble you with this letter more particularly on account of the false analogy which is likely to be made between special diseases, such as diseases of the eye and other complaints. It has already been pointed out in your columns that the work now done by the County Council oculists might equally well be done by teachers after a short course of instruction, and you have advocated that the oculists should correct the refractions which at present they are occupied in discovering. I am in complete agreement with this policy which would relieve hospital clinics of uninteresting drudgery and would entail no hardship upon general practitioners. It is a very different matter, however, to hand over to the County Council the treatment of other minor complaints and more serious diseases affecting school children, for this would be in the highest degree detrimental to hospital clinics and general practitioners, as well as entailing enormous expense.

More than ever at the present time questions continually arise which demand coördinated action on the part of the medical staffs of the London hospitals. Lack of coördination in matters such as that under consideration is likely to lead to schemes which fall short of the best which can be devised. In this manner the praiseworthy aims of the County Council and of the hospitals, which are alike working for the alleviation of suffering, are liable to be frustrated. The lay control of the London hospitals is in some considerable degree coördinated by the Council of King Edward's Hospital Fund. I would suggest that a standing committee composed of representatives of the medical staffs of the London hospitals be formed to which matters of mutual interest might be referred with a view to coördinated action. The Central Hospital Council does not exactly meet the requirements of the case.

I am, Sir, yours faithfully,

Wimpole-street, W., Feb. 15th, 1908. J. HERBERT PARSONS.

DEVELOPMENT OF NODULES IN SUTURE SCARS AFTER OPERATIONS FOR THE REMOVAL OF CANCER.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Feb. 1st Mr. C. W. Mansell Moullin, in a paper on the above subject, draws attention to cancer nodules occurring in the cicatrices caused by the sutures used in closing the abdomen in a case of cancer of the pylorus which had been under his care. In referring to a publication of mine in THE LANCET of Nov. 9th, 1907, in which somewhat similar cases were reported, he considers that the appearance of nodules in his case suggests that the mode of conveying cancer infection to the suture tracks is not so simple as is generally believed. My paper referred to the danger of cancer infection and its importance in relation to the question of "recurrence." I tried to demonstrate that the cancer cell is infective, and therefore if it be set free at the time of operation it is liable to be implanted by the surgeon or else implant itself in some part of the wound and thus give rise to a fresh cancerous outbreak. The cases of suture star nodules quoted were given as illustrations of how readily cancer cell implantation may occur and also as some of the possible ways in which implantation may be brought about.

In the course of my experience I have come across a great many varieties of infection of the suture tracks: in some the infection was limited to the superficial and in others to the deeper layers of the skin; and, again, it manifested itself as a nodule deeply in the tissues directly in the course of the sutures; and I have also seen it occurring as infection of the entire track of the suture; nevertheless, it is far from belief that these cancer "recurrences" were all due to infection having been carried there on the needle or sutures. In Mr. Mansell Moullin's case two sets of sutures were used in closing the wound, one of stout catgut, interrupted, passing through all the layers of the abdominal wall except the skin; the other of finer catgut, continuous, through the skin only. Practically all the suture points of the former series were infected; none of the latter. His explanation as to how the latter condition occurred appears to me to be a perfectly rational one, and I may add that a similar condition has come under my own observation. The fact that no nodules appeared in the scars of the superficial stitches leads one to infer that there were no free cancer cells at the time of operation and that the infection in the tracks of the deeper sutures came from the abdomen. Cancer cells escaped where the sutures pierced the peritoneum, and finding their way along the tracks there they became lodged, and probably the tissues damaged by the suture proved themselves a ready site for implantation. Where the abdomen is closed by a single row of "through and through" sutures the infection will sometimes spread along the whole suture track, and, in fact, in cases of tubercular disease of the peritoneum, tubercular infection spreads in a similar way along the suture. Doubtless Mr. Mansell Moullin's suggestion explains the occurrence of these phenomena. On the other hand, his explanation of the occurrence of cancer nodules in suture scars, after operations for mammary cancer, is a totally different one. He suggests that cancer cells may be present in the tissues, and that the irritation of the sutures may cause these cells to take on greater activity at the points of irritation, hence the subsequent development of suture scar nodules. Though I recognise the possibility of this, yet I very much doubt that it is a frequent occurrence.

It is a recognised fact that the peripheral spread of mammary cancer is almost entirely by the lymphatics. Therefore, if cancer cells are present in the tissues of the flaps it almost necessarily follows that infected lymphatics must have been divided at the time of operation, thus allowing the escape of cancer cells. From my experience these latter would very readily manifest themselves by setting up cancerous infection along the line of incision, if they did not even cause widespread infection of the whole wound. It is not so much that cancer cells are already present and that they take on activity owing to diminished resistance of the tissues as the result of irritation of the sutures, which is mainly the cause of suture scar "recurrence." Our own faulty technique is more frequently responsible. It permits the escape of free cancer cells, which readily implant themselves in whatever part of the wound they may come to rest, or to whatever part of it they are carried by the surgeon, whether by suture or otherwise. This explains many of the cases of suture scar infection, but there are others, and Mr. Mansell Moullin's interesting case is one of these, where the suture does not actually carry infection; but, on the other hand, it encourages or permits of ready implantation.

I am, Sir, yours faithfully,

Harley-street, W., Feb. 11th, 1908. CHARLES RYALL.

PLEURAL EFFUSION AND ITS TREATMENT.

To the Editor of THE LANCET.

SIR,—In my letter in THE LANCET of to-day, p. 521, col. 1, second line, "not elastic" should be "non-elastic"; p. 522, col. 2, twentieth line, "abstract quantity" should be "abstract quality." I would not have troubled about these trivial mistakes only I am dealing with two *soi-disant* philosophers and I don't wish even a printer's error to creep into my letter.

I am, Sir, yours faithfully,

Liverpool, Feb. 15th, 1908. JAMES BARR.

To the Editor of THE LANCET.

SIR,—You have been so generous with your space that I forbear to reply categorically to Sir James Barr's last letter, the more so that a detailed reply would involve much repetition and probably weary your readers. That Sir James and I differ profoundly on the subject of pulmonary physics is becoming more and more obvious. Sir James now asserts that the tautness of the lungs does not exert traction, that the pulmonary tissue is not relaxed at the end of a full respiration, that the fibroid apices of the lungs in fibroid phthisis do not drag in the chest walls, and that, no matter how many of the pulmonary vessels are destroyed in this disease, if "taut lungs constantly maintained a negative intrathoracic pressure there could be no obstruction to the systemic venous circulation." (Not even if all the pulmonary capillaries were reduced to a single one!) In my opinion all these contentions are wrong.

It seems to me, Sir, that the time has now come for the

jury to retire and consider the verdict. I have stated my case as simply as I could and am content to let it stand as it is—unamended and unqualified.

I am, Sir, yours faithfully,

Wimpole-street, Feb. 16th, 1908. HARRY CAMPBELL.

To the Editor of THE LANCET.

SIR,—I have carefully read and re-read the correspondence between Sir James Barr and Dr. Harry Campbell, and the conclusion I have come to is that it has been greatly confused through a lack of knowledge and precision on the part of the former in discussing the physical problems involved, and on the part of the latter through the use of unnecessarily complicated phraseology.

The employment of the terms "tautness" and "traction" by Dr. Campbell is peculiarly unfortunate, as they, at least it appears so to me, could both have been so much more easily expressed by the word "tension." Tension is a state of strain, or the act of straining, and is a term perfectly well understood. Pulmonary tautness is a pulmonary state of strain, or tension. Pulmonary traction is a pulmonary act of straining, or tension. The word "tension" implies both the condition and the act. The tension of a wire means that it is tight and that it pulls; and it would be absurd to worry over its tautness and traction, as both are stated or implied when one speaks of its tension.

Dr. Campbell says I "fail to make the necessary distinction between tautness and elasticity." I purposely avoided discussing the subject, but the distinction is obvious. There can be tension or tautness in a wire far beyond what its elasticity can produce or resist, or there may be tension or tautness less than what its elasticity can produce or resist, in which case the force of elastic recoil or tautness are equal. There can be tension or tautness in a fibroid lung as well as in an elastic one. I am quite at one with Dr. Campbell in distinguishing between tautness (or tension) and elasticity: where I differ is when he says that the negative intrapleural pressure when the thorax and respiratory muscles are at rest "is due to the tautness of the pulmonary tissue pure and simple, and that the factor of elasticity, or elastic recoil, has nothing to do with it." Dr. Campbell, like so many people who discover a truth, fails to see its limitations.

Suppose there be a large pneumothorax; the lung recedes far from the body wall and rests contracted. Gradually, by vital processes, the air is absorbed, and as the chest walls cannot fall in so readily as the lungs can stretch, the latter expand and presently again fill the thorax. What stretched the lungs? Dr. Campbell says "the stretched condition of the pulmonary tissue is effected by the inspiratory muscles." I maintain that the cell action, or other vital processes which actively absorbed the air from the pleural sac, lowered the pressure in it and cleared the space for the lung to expand into, primarily caused its expansion, by decreasing the opposition to the action of the intrapulmonary air pressure. Likewise though at birth the lung is stretched by the thoracic expansion, the lung at, say, ten years of age is another lung, and I can conceive of no other way in which the new elastic tissue has kept on the stretch than by supposing it has been laid down on the stretch, or has contracted afterwards. In this way the elastic tension producing the intrapleural negative pressure, when the thorax and respiratory muscles are at rest, is generated within the lung, and in time would pull the visceral and parietal pleuræ apart if their lining cells would allow air or liquid to accumulate there and permit their separation. When the inspiratory muscles expand the thorax beyond the position of rest then it is that they obviously operate in lowering the intrapleural pressure.

In addition to his employment of the words "tautness" and "traction" Dr. Campbell also seems to me unfortunate in his use of the word "suction." He does not use it as indicating a force decreasing the resistance to another force, as Sir James Barr rightly contends he should, but as though it were the force directly producing the effects observed. These are minor matters; the great principle for which Dr. Campbell has so earnestly contended—viz., the much overlooked importance of the action of the inspiratory movements in their effects within the chest, and the nature of these effects—he has done much to elucidate and establish, and I personally feel much indebted to him for what I have learned at his hands.

In regard to Sir James Barr's criticisms, it seems to me, after his letter of Jan. 25th, there is little to be gained by discussing physics with him. He there gives from the "Century Dictionary" a definition of "elastic" in which it is stated, "A body is perfectly elastic when it has the property of resisting a given deformation equally ....," and he remarks: "The Campbell physicist says it is a mere property of a certain form of matter, by which it has the power of recovering its original form after being stretched, but I prefer the other authority who says that it also signifies a *resistance to stretching or other deformation*." Now the other authority which Sir James Barr quotes and prefers does not say it "signifies a resistance to stretching or other deformation." The words are, "it has the *property* of resisting," and it is this idea of a property which Dr. Campbell and I want Sir James Barr to admit. Surely it would be better if Sir James would "prefer" the definition of elasticity given by the authority from which he quotes, the "Century Dictionary," rather than his own misquotation from that authority.

Sir James Barr shortly after proceeds in his letter to what he calls "prick the bubble" blown by Dr. Campbell, and he compares the uses of a "non-elastic chain" and what he terms "a hawser made of highly elastic hemp." He says: "The elastic rope offers resistance to being stretched and when the tug of the ship ceases the elasticity gradually pulls the vessel back to its former position." Sir James Barr should know that a hawser is made on the twist, and it stretches, not because hemp is what he styles "highly elastic," but because the component fibres and twists straighten out under tension, taking a direction more along the length of the rope than before and less across it, while at the same time mutually compressing one another. If Sir James twists a piece of string he will see that it shortens and will then lengthen when pulled upon more than before. The recoil in the hawser is due to the recovery of the parts from mutual compression and has nothing at all to do with elasticity in hemp. Moreover, if Sir James considers hemp highly elastic, why does he immediately speak of "non-elastic fibroid lungs"? By what mental process does he make hemp highly elastic and fibroid lungs non-elastic?

Later in his letter Sir James tells how he was selected by the Home Office to "devise a method of estimating the elasticity of any rope," and he modestly says, "I did not retire to my study and work out the coefficient of elasticity, and what should, but probably would not, happen. I determined the *vis viva* or energy which I considered necessary, and then under a strain of a given number of foot pounds I determined the stretch, and I had no difficulty in devising a method of measuring the length of unstretched rope which would allow of a given energy." Fancy speaking of the length of unstretched rope which would allow of a given energy! Energy is the "capacity for doing work," and is measured by the amount of work a body having energy can be made to do. What capacity for doing work is inherent in a piece of unstretched rope. Would it allow of boiling a kettle or climbing a hill? It would have been far better if Sir James Barr had retired to his disparaged study and learned the elements of physics as taught before hastily experimenting. He might then have started with ideas of energy, elasticity, &c., which were physically precise.

Sir James Barr's criticism in your last issue of my letter of Jan. 25th calls for little comment. He seems to hold me responsible for the consequences of the physical definition of elasticity. He says: "Let us see how his definition works out." It is nothing to me how my definition works out and what confusion or sadness it produces in the mind of Sir James. If he discusses physics as a physicist he must take the consequences, however they work out; if as the "man in the street" he may call hemp highly elastic, rubber more elastic, and gas most elastic, but he must pose in future as the "man in the street" and not as a physicist. I will leave my last letter and Sir James Barr's criticism of it to the impartial judgment of your readers as this communication is already too long, but I hope more particularly that Dr. Campbell's suggestive views may have the attention which I think they deserve.

I am, Sir, yours faithfully,

Mentone, Feb. 17th, 1908. D. W. SAMWAYS.

*** The various parties to this correspondence have had ample space in which to expound their views, and none of them can complain of the undue vigour of their opponents' language, for none of them has failed to reply with equal vigour. As they cannot all have the last word we supply it. This interesting discussion must now cease.—ED. L.

TOMB OF AN ANCIENT EGYPTIAN PHYSICIAN.

To the Editor of THE LANCET.

SIR,—In THE LANCET of Jan. 11th in your annotation on "The Burial Customs of Ancient Egypt" by Professor John Garstang you mention the following in connexion with the deceased physician's tomb—viz., that "various and many as were the objects deposited beside his body only two of these can in any way be considered as connected with his vocation—namely, a set of writing implements, consisting of a writing tablet and a pen-box"; also that "unfortunately no written notes survive upon the palette." The significance of the pen box and tablet in or upon the tomb seems to be misunderstood. They are not scarce in any of the bigger towns of India and Arabia. Those who have visited the well-known tombs of the Moghul Emperors, Akbar and Shah-Jehan, and their wives, must have noticed the carved pen box and the adjacent tablet, these being purely symbolic, the pen for the man—the active agent and doer of things; the unwritten slate representing the woman—i.e., the passive agent, the slave and complement of the man.

I am, Sir, yours faithfully,
L. JONES, M.R.C.S. Eng., L.R.C.P. Lond.

Sialkote, India.

THE SITUATION AT THE HAMPSTEAD GENERAL HOSPITAL.

To the Editor of THE LANCET.

SIR,—I think the time has come when an attempt should be made to remove the impression that this hospital has been guilty of some crime against society in general or the medical profession of Hampstead in particular, and in order to do this I beg the hospitality of your columns, although in telling the story I am largely repeating what has already appeared editorially in your columns.

The Hampstead Hospital was started in 1882 with a few beds for patients able to contribute a little towards their support, and was most successfully officered by certain general practitioners in its neighbourhood. It is misleading, however, to describe it as a "cottage hospital." The free beds, which have existed since 1894, have always been in charge of the regular medical staff; only the "contributory beds" have been available to other practitioners. In the new hospital there is no intention of taking away this privilege from the local members of the profession.

As a result of increased demands the first portion of the new hospital was erected two years ago with 64 beds, and in these excellent quarters the hospital has continued to receive the willing and able services of the same staff of general practitioners. At the opening ceremony it was announced that a sum of £10,000 was required to free the hospital from debt and that a further sum of £15,000 would complete the scheme to provide a total of 110 beds. An immediate response was received, Sir Henry Harben announcing that he was authorised by an anonymous donor to say that £20,000 would be forthcoming if the remaining £5000 required were obtained. To avoid diverting support from the general funds of the hospital by an appeal for this sum the council laid the conditions of this special offer before King Edward's Hospital Fund and received a promise from them to provide the sum of £5000. At the same time the King's Fund suggested that the growing importance of the hospital made it desirable for it to adopt a similar constitution for its medical staff to that of all other general hospitals in London.

At a later date the King's Fund having had its attention drawn to the condition of the North-West London Hospital, the buildings of which were considered unfit for continued treatment of in-patients, and the committee of that institution being unable to see its way to obtain an adequate sum for rebuilding, suggested that an amalgamation of that hospital with the Hampstead General Hospital might be arrived at, an out-patient department being maintained solely in Kentish Town and all in-patients being received at the Hampstead Hospital. The King's Fund decided that as it was proposed that the Hampstead General Hospital should henceforth be reckoned, as was the North-West London Hospital, amongst the Metropolitan hospitals, it should be a condition of the amalgamation that the Hampstead General Hospital should be officered by physicians and surgeons of recognised consulting rank. In a canvass on this proposal, by means of a series of questions issued to the members of the local profession, the opinions expressed for and against the change were almost equal, but the result was distinctly unfavourable to the scheme of a mixed staff of general practitioners and physicians and surgeons in consulting practice. It was eventually resolved by the council of the hospital to make the change to a staff consisting of physicians and surgeons in consulting practice, with definite provision for a term of continued service in the case of members of the existing staff of general practitioners. *These terms were accepted as satisfactory by the members of the existing staff*, except as regards the decision, arrived at later under the amalgamation scheme, that the two junior members in charge of out-patients (being in general practice), who were entitled to further service of 13 years each, should not be eligible for promotion to in-patient posts.

As regards the amalgamation proposals, I may say that on April 10th, 1907, a committee of the local medical profession and the medical staffs of the Hampstead and North-West London Hospitals reported to a meeting of the British Medical Association (Hampstead division) that the proposed amalgamation with the North-West London Hospital was desirable from the public point of view (on certain conditions). On the amalgamation being decided upon, the medical staff placed themselves in line with the local practitioners who were opposed to the changes. Since then, as your readers are aware, a canvass of local practitioners has been made by the Hampstead division of the British Medical Association, resulting in a vote which in their view justified their sending a "warning notice" to the *British Medical Journal* which was accepted.

I may say that the council of the hospital appreciate most highly the valuable services of the present acting medical staff and also their generosity in consenting to act until successors could be appointed; but the council nevertheless much regret that when arrangements had been made for the retention of these gentlemen on the staff, on a plan but slightly modified from that which had been approved by them, they should suddenly have changed their mind and *joined with others in a scheme for preventing their place being filled by such persons as the King's Fund suggested*, and financial reasons had compelled the council to accept. The hospital cannot get the promise of the necessary financial support in Hampstead—it will need three times as large an income as that which it has been able to count on—and it has no alternative but to accept the substantial and welcome help offered by the King's Fund, and at the same to submit to its conditions which, after all, in a place like London, are not unreasonable.

In conclusion, I would say that the council of the hospital have no quarrel with the medical profession in Hampstead, nor, on the other hand, have they any fear, doubt, or hesitation in adopting the course which the successful evolution of the hospital has thrust upon them.

I am, Sir, yours faithfully,
ERNEST COLLINS,
Chairman of the Council, Hampstead General Hospital.

Hampstead, Feb. 19th, 1908.

THE PRESENT PROSPECTS OF THE MEDICAL PROFESSION.

To the Editor of THE LANCET.

SIR,—Continuing on the ethical lines which we as a profession have been following the answer to the heading of this correspondence would be, "Not much." The letter of "Virtutem Sequor" contains much which can be agreed with, particularly that part in which he deals with so-called "specialists." Some while ago you headed a correspondence, "What is a specialist?" To this question you had replies but no definition. I will, with your kind permission, essay that needed definition. "A specialist in a department of the healing art is one who, knowing thoroughly the entire human body and its ailments, is able to devote his attention to that department for which his skill and dexterity are most suited." Instead of the above, "specialism," as now practised, should be defined as follows: "A 'specialist' is a person whose knowledge needs increasing and skill perfecting in that department in which he exclusively practises, presuming upon a superficial knowledge of the human body and its ailments generally." The contrast is as striking as true. The letter of "Half-and-Half" centres the "bull's-eye" and

will meet with the endorsement of every one who has been a general practitioner and has kept himself abreast of the times and is striving to rise, and with his rise improve the status and prospects of the profession. The first and true definition of a specialist applies to the risen general practitioner, the latter definition applies to the "hospital-appointment-made-specialist" who yet has his knowledge to gain, who has no skill, yet who professes to sell that which he does not possess. From the above you can see that the prospects for those who have worked hard as general practitioners is certainly "not much." Your late most honourable campaign in the Law Courts in defence of the rights of the public and of those of us who have to work hard for our daily bread was partly due to the condition of affairs dealt with by both "Virtutem Sequor" and "Half-and-Half."

Did general practitioners keep themselves abreast of the times, and were "specialists" (?) more really "specialists" and less "exclusivists" (learning their "one horse-shay racket"), there would be no lay advertisers of this and that "specific" for one disease and another. Is not "specialism" as now practised a species of quackery? A good "general practitioner" is a true "specialist in many departments," a modern "specialist" is a one-string fiddler in an orchestra who does not know his notes. Let me ask "Virtutem Sequor" one question. Is it worse to advertise rather than starve and become a financial defaulter following an unwritten law which no one really cares a straw about, or is it worse to be ethical (with your mouth only), the while doing all you can to hinder and ruin the prospects of your fellow man and brother (?) as is practised in London at hospital elections? Which of the two pictures will show painted the blacker sheep? The frank, open advertiser, according the same to his fellow man, or the hypocrite who does all he can to damn the career of a general practitioner and pitchforks a young "specialist" (?) into a post to keep out the other fellow? All those things of which "Half-and-Half" ably writes have I done, and more. I will therefore finish [what he has left unsaid. He says, "It is, I think, forgotten by many that each patient sent by them to a "specialist" means the loss to them, only too frequently, not only of that patient but of all that patient's friends who have, or think they have, any disease affecting that particular region of the body." Let us now continue (in my own words), "and of those who have not, but have ailments of other parts, will that 'specialist' send on direct to his brother 'specialists' in accordance with their custom of mutual 'back-scratching,' and so on, till soon there is no practice left for the general practitioner who sent the first case." If it is borne in mind that these so-called "specialists" are daily engaged in cutting the throats of the lesser general practitioners in the out-patient departments of hospitals, besides distributing their richer patients amongst themselves, we must repeat "*Not much.*" In a recent issue you printed an article showing the existence of a decided schism in the Liverpool district between general practitioners and hospital practitioners who are advertised by their (?) hospital and I make bold to say that the London general practitioner is a greater fool than I take him for if the same does not occur soon in London.

Strangely enough, a letter by "F.R.C.S." entitled "The Responsibility for the Anæsthetic" shows up another phase of the "prospects of the profession," Why does the general practitioner asked to be allowed to give the anæsthetic? As one who has been a general practitioner let me answer. To be able to retain a hold on his patient, as a patient, and not to be entirely cut out of that which his honesty has put into the hands of "F.R.C.S." A general practitioner nowadays is a tout (at his own expense), paying his rent, rates, taxes, and keeping up a position, purely in order to find cases with fat fees for the "specialist." The "specialist" comes in, whisks the patient off to a nursing home, and out goes the poor wretch of the general practitioner to his debts; those that he owes and those that are owed to him. In nine cases out of ten, the general practitioner has money owing to him by the patient for present and past illnesses, the "specialist" comes in, and the patient begs, borrows, or steals the wherewithal to pay the fee demanded. Off goes the specialist with the "ready" and the general practitioner has only debts owing to him, and a useless patient for some time to come, till the money borrowed to pay the "specialist" is repaid. "I have had some" and got heartily sick of it. The more fair and equitable rule is the one which I now follow, and perhaps "F.R.C.S" will please note and practise it. When the case needs operation my practice is as follows: refuse the request except the general practitioner be a skilled anæsthetist, but ask the general practitioner to assist at the operation and undertake the major part of the after attendance, and for his services give him "down on the nail" one-third of the fee agreed upon for the operation, for he has earned it. So that "F.R.C.S." can still have his skilled anæsthetist and at the same time feel that the general practitioner gets something for his wife and children and is not left, as he often is, a "skinned eel" with an "invitation to dinner." More often than not that third part of the operation fee will be the only money the general practitioner will ever see out of the case. Let this plan be adopted universally and there will then, at any rate, be some prospects for both general practitioner and specialist. Mutual help and support should be the watchword, not selfish hindrance and throat-cutting, grasping greed.

I am, Sir, yours faithfully,
F. W. FORBES-ROSS, M.D. Edin., F.R.C.S. Eng.

Harley-street, Feb. 16th, 1908.

To the Editor of THE LANCET.

SIR,—So far as the general public is concerned "Virtutem Sequor" raises a very important issue in his remarks *re* consultants. What constitutes a consultant, and to what fees is he entitled? A friend of mine afflicted with failing eyesight had occasion to go to an optician who advised him to go to a certain oculist. This latter gentleman examined the eyes, prescribed glasses, and charged £2 2*s*. On subsequently referring to the Medical Directory it was found that the doctor consulted had merely ordinary qualifications and was not, nor ever had been, attached to any ophthalmic hospital.

Now, Sir, as a mere layman, what I want to know is, how can the public be protected from this kind of thing? The general impression amongst us is that a consultant is a gentleman of the highest qualifications (e.g., F.R.C.S.) and who has a hospital appointment. I appeal to you, Sir, for an *ex cathedrâ* pronouncement on the matter.

I am, Sir, yours faithfully,
Feb. 14th, 1908. WALTER CARTER.

THE INACCURATE DOSAGE OF MEDICINES.

To the Editor of THE LANCET.

SIR,—Your remarks in an annotation in your issue of Feb. 15th, p. 512, on "The Inaccurate Dosage of Medicines," due to the different sizes of bottles supposed to be two, four, six, and eight ounces, are most appropriate, but there is also, I think, a still greater reform required, that all tinctures should be so prepared that the same quantity of each should represent an adult dose, say one drachm. Infusions might be one ounce, wines one drachm, and so on, with spirits, pills, powders, &c. Surely wholesale druggists could arrange this, and so reduce the dangers and difficulties in dispensing medicines. There is often some uncertainty in remembering the correct doses of drugs other than those habitually used, and a desirable preparation may be omitted from the prescription through this cause.

I am, Sir, yours faithfully,
Dorney, Windsor, Feb. 16th, 1908. J. H. WATERS.

RECEPTION HOUSE FOR RECENT CASES OF INSANITY.

To the Editor of THE LANCET.

SIR,—Through the medium of your valuable columns and the columns of your less specialised contemporary the *Sunday Chronicle*, I have recently learnt that some striking "advances" have been made in the treatment of mental diseases in Scotland—namely, (1) through the medium of a structure of corrugated iron and "compo" boarding, &c., and (2) some open air.

I regret that (owing possibly to a defect within myself), having carefully read all the details mentioned in Dr. H. C. Marr's paper in your issue of Feb. 8th, I entirely fail to see, on analysis, any difference in the practice adopted at Woodilee to that in use here (in the southern portion of England) for many years, or in probably 90 per cent. of other asylums in England, with the exception that: 1. Only few asylums have female nurses in the male wards, and this may, or may not, be an important factor, though I personally have yet to feel that yearning desire to add one to the female staff. 2. That

no day nurse has keys, &c. If this be so important and so satisfactory a factor, why should it be limited to the day-time? But doubtless this point must be considered with the recovery-rate, which, be it noted, is at Woodilee, according to published statistics, about the lowest in Great Britain.

I trust this is due to the large number of cases of dementia admitted, which should also explain the absence of keys, &c.; surely it cannot be due to the elaborate intermingling of corrugated iron, "compo" boarding, open air, and female nurses. I do not throw doubt for a moment upon Dr. Marr's great ability, nor the entirely excellent organisation and administration of the asylum over which he so zealously presides; this, however, has nothing to do with the subject at issue. I am, Sir, yours faithfully,

MEDICAL SUPERINTENDENT,
Feb. 6th, 1908. County Asylum (England).

ANÆSTHESIA AND ITS MORTALITY.

To the Editor of THE LANCET.

SIR,—A discussion on "deaths under chloroform" at the Medico-Legal Society is reported in the lay press. Dr. F. W. Hewitt is there stated to have recommended a higher system of tuition as to the administration of anæsthetics. It would be interesting further to strengthen such a recommendation, by an inquiry as to why, at provincial, Scotch, and Irish hospitals, the percentage of deaths connected with the administration of anæsthetics is so small as compared with the London statistics. I am told that at Edinburgh the specially instructed students often administer the anæsthetic, and, in chloroform anæsthesia, only use a towel. So I am told. Is the special instruction there more thorough than here? Dr. Hewitt generally has good reason for his opinions. I am, Sir, yours faithfully,

Feb. 12th, 1908. G. H. R. D.

THE SITE OF A SANATORIUM.

To the Editor of THE LANCET.

SIR,—As I am interested in the efforts of the medical profession to minimise the ravages of consumption, perhaps you will give me a few particulars as to the nature of the soil on which a sanatorium should be built. The Cork Conjoint Hospital Board has been offered, as a free gift, land on which to erect a public sanatorium. The proposed site has been described as a bog over which snipe have been shot; bulrushes grow on it; the surface earth to the depth of 6 or 12 inches is peat mould, under which is a deep stratum of yellow clay; there are several small ponds or holes, from 8 to 12 feet in diameter, containing stagnant water; and in other places surface water lies on the ground. Would this be a suitable or unsuitable site? Would it be a good or particularly good site, a bad or particularly bad site? As I know your journal focusses medical opinion on such subjects perhaps you will excuse me for venturing to address you.

I am, Sir, yours faithfully,

Feb. 13th, 1908. VALETUDINARIAN.

THE MEDICAL INSPECTION OF SCHOOL CHILDREN.

To the Editor of THE LANCET.

SIR,—A great many opinions are finding expression as to how the work of medical inspection of school children shall be carried out, and it seems doubtful whether the uncertainty at this moment exhibited can be in any degree edifying to the powers that be, or to the public who are acting the part of lookers-on.

The last memorandum of the Board of Education issued upon the subject states that the difficulties to be encountered are chiefly administrative. Precisely so, but the Board of Education do not do much to diminish these difficulties. The few suggestions which they have made in this behalf are sufficiently confusing. That they are desirous of linking up this public health work with the other public health work is evident and that the medical officer of health, who is the chief public health officer, must take a prominent part in the business is equally manifest, but having given a hint of their desire in this direction, they have left it to the local education committees to make all appointments, and these committees are to do the work as well as they can, or as badly as they will. The Board of Education have said in their memorandum that the sanitary authorities should instruct their medical officers of health to go in and advise the education committees. This is rather cool of the Board of Education, who have nothing to do with the sanitary authorities or their medical officers of health. And here lies difficulty No. 1—that is, the complication of having the public health work of the country managed by two different sets of committees, the public health committees proper and the education committees. Unless a free hand be allowed the superintending officer to conduct the work without interference from the education committee, whose members are likely to think themselves quite capable of "directing" the work of medical inspection, the result must be confusion worse confounded. There is no direction in the memorandum of the Board of Education as to how these committees are to treat and pay their medical officers, but we know that these officers will be expected to subscribe to the farce that it is the committee and not the officer that does the work and is the responsible party. And what is the Local Government Board doing that they allow officers that erstwhile were under their own sovereign control to become the fags of a peregrine department?

As to difficulty No 2, the Board of Education's memorandum alludes to the medical officer of health as if the office of that person were perfectly satisfactorily established and as if the public health department of every town of 20,000 inhabitants, and of every county in the land, were efficient, whereas we know it to be far otherwise. We know that three parts of the public health service that is being called upon to undertake this tremendous accession of work is hopelessly inefficient and incapable of its performance. And yet this work cannot be divorced from the public health office; it is public health work. The medical examination of the children, which must be itself deputed to the general practitioner, must nevertheless be directed and supervised from the public health department, and this general direction is only a part of the work that will fall to the public health officer, for much more will ensue as the result of the examinations and in connexion with them. Yet with the public health service in the condition it is, what a putting of the cart before the horse is this business. Would it not be better for Parliament in the present session to pass a repealing Act, or the Board of Education to send round a notice postponing all action until we have the needed reform in the public health service?

The various and bewildered propositions as to the way the medical inspection of school children shall be carried out which are emanating from the education committees as the result of deliberations guided by competent or incompetent medical officers of health, or unguided altogether by any medical officer, only further serve to exemplify the ridiculous condition of our public health administration, and of the absurdity of supposing that a work of such special character and national effect as that in question can be accomplished nationally by the independent ungoverned action of hundreds of different committees, or, for that matter, by as many medical officers of health acting without any general governance, constraint, or co-relation.

I am, Sir, yours faithfully,

Feb. 17th, 1908. M.D., D.P.H., M.O.H.

THE UNIVERSITY OF LONDON AND PROVINCIAL STUDENTS.

To the Editor of THE LANCET.

SIR,—May I, in the name of the numerous external students of the University of London, protest against the absurd length of time they are made to stay in town when sitting for the final M.B. examination? If a candidate takes all the subjects at one time he is kept up for three weeks. He has a good deal of his time wasted and in many instances his concluding tests are given to him *after* students residing in London have received theirs. In the case of a candidate only taking half the examination at a time the evil is much worse, for there is then an interval of eight or nine days of idleness provided for him. He has either to remain in London at considerable expense, or make two or more journeys to the provinces, which may be equally expensive. I consider that the authorities can, if they choose, remedy this state of affairs. I am, Sir, yours faithfully,

Feb. 18th, 1908. PROVINCIAL.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

The University.

THE report of the Principal to the governors of the University, which was presented at the annual meeting on Feb. 20th, shows a large increase in numbers in the Faculties of Arts and Science, and as satisfactory a condition as could be expected in the other faculties. Medicine and commerce remain comparatively stationary, and the numbers in the Medical Faculty are not likely to increase till the rush into engineering declines and the public recognise that, for the money and time spent, the medical profession offers as good a return as, if not a better average return both as regards money and position than, any other profession. In medicine as in other professions it is true that there is always plenty of room at the top, but it is more true of medicine than perhaps of any other profession that the licentiate or graduate from the moment of obtaining his qualification or degree can make a respectable living. This simple fact is not generally understood and until it filters into the minds of parents and guardians the number of entries in the Medical Faculty is not likely to increase largely. As regards the University as a whole the Principal's report shows that its work is proceeding satisfactorily and advances are being made, but further extension and development are hampered by want of funds. This is a condition which afflicts most of the universities of England but it is particularly felt in Birmingham where the advances have been so rapid and great in a comparatively short time. Money is urgently needed and it is to be hoped that before long it will be obtained, so that the excellent work going on may proceed steadily and without hindrance.

Mr. J. Hall-Edwards.

Every member of the medical profession, as well as his own immediate friends, will sympathise with Mr. J. Hall-Edwards, whose left hand was amputated at the beginning of the week. Mr. Hall-Edwards was an enthusiastic pioneer of x ray work and his hand is a sacrifice to the advance of medical science, for, prosecuting research in the new avenue of work before the dangers were understood, he exposed himself fearlessly to the rays and, unfortunately, his hands were attacked with x ray dermatitis. Treatment failed in the case of the left hand and as the condition was proceeding from bad to worse it became necessary to amputate, but it is hoped that the right hand will respond to treatment and that no further operation will be necessary.

The University Company of the 1st V.B. Royal Warwickshire Regiment.

The annual dinner and prize distribution in connexion with the above company, which took place on Feb. 14th, was, in a certain sense, not devoid of gloom, for there was a fear which expressed itself, even through words of hope to the contrary, that the members might be taking their last annual dinner together as a university company. What is to happen to university companies under the new scheme of reorganisation is not yet known, for, as Mr. Neville Chamberlain said, the wheels of the Government move slowly in this matter, but it is clear that unless some special provision is made the days of university companies are numbered. They cannot form part of a local battalion because the terms of enlistment, &c., are not compatible with university duties. It is possible that they may be affiliated with a local battalion and therein lies the hope of many, but it is feared that they may be disbanded, in which case much valuable material will be lost.

Medical Inspection of Schools in West Bromwich.

The report of the West Bromwich elementary education committee on the medical inspection of school children is interesting both as regards the estimate of the work to be done and the price it is proposed to pay for it. The committee estimates that there will be 1500 children admitted since January 1st who will have reached the age of five years. These will have to undergo a thorough and searching examination, and there is to be a second examination of 1500 children who will be leaving during the year. When the scheme is in full working order there will be in addition two intermediate examinations. The committee's report states that the medical officer estimates that 800 hours per year will be required for the examinations. Apparently, therefore, when the scheme is in full working order, 6000 children will be examined each year in 48,000 minutes, and it is clear that there will be no excess of time for thorough examination. The cost is estimated at £350 for the first year and it is suggested that a medical inspector should be appointed at a salary of £250, the remuneration to cover expenses and any extra personal assistance.

The Notification of Births Act.

The Birmingham city council has adopted the Notification of Births Act (1907) and it is to come into force on March 1st next. In view of this fact the medical officer of health has sent a letter to all practitioners in the city area drawing their attention to the fact that on and after the date mentioned, in the case of all children born after the twenty-eighth week of pregnancy the birth must be notified either by the father or by the person in attendance upon the mother. The medical officer points out that all births must be notified irrespectively of class, but it is, of course, understood that the health visitors will only be sent to those cases where it appears that their services may be useful. Forms of notice have been printed and a supply of them can be obtained on application to the health department; they are, however, not essential, and a postcard or letter will serve the purpose equally well.

The Health of the City.

Coincidently with the period of sudden changes of temperature which came upon us last week the death-rate of the city has jumped up from 18·6 to 21·7. The increase is almost entirely attributable to pulmonary affections which are so liable to become serious under the conditions mentioned. We are also suffering from an influenza epidemic, but though it is widespread it is, on the whole, a mild attack and so far has proved fatal only in a comparatively few cases. It is, however, proving a serious trouble to many large business establishments whose staffs it has decimated severely.

Health of Sutton Coldfield.

Sutton Coldfield may almost be looked upon as a residential part of Birmingham, for so many of those who spend their days in the city live during the remaining parts of their lives in this very healthy borough. In his annual report on the sanitary condition of the borough, Dr. A. Bostock Hill estimates that the population has increased by 1054 during the year and that it now totals 20,000. The birth-rate for the past year was only 19·71, the lowest recorded since 1898, and the death-rate was 8·97, which is the lowest for the last ten years. Being so easily reached and so healthy it cannot be a matter of surprise that so many people who make their livings in Birmingham choose to reside in Sutton Coldfield.

Feb. 18th.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Meat-Traders' Conference.

AN important gathering of delegates from all parts of the country met in Manchester last week to attend the annual meeting of the National Federation of Meat Traders' Associations. In his presidential address the chairman mentioned that the members of the trade were handicapped by laws and enactments administered by men "who had plenty of theory but no practical knowledge." He spoke also of the confusion and want of uniformity with regard to the inspection of meat, scarcely two places being alike in this respect, so that meat may be passed as fit for consumption in one place while at another 30 miles away the same meat would be condemned. No doubt uniformity is desirable and inspection should not be needlessly vexatious, but it is necessary for the protection of the public that it should be thorough. On one matter meat-traders have always shown great sensitiveness and wrathful indignation—namely, on what the President called "the exaggerated statements about private slaughter-houses." He reproved the *Manchester Guardian* for calling them "vile places, insanitary places, dirty places, and they were given a very bad character." On the other hand, he said the "owners of private slaughter-houses are animated by a love of cleanliness and sanitation, and are not afraid of the inspector's visits, because they take a pride in their buildings and their trade." This is no doubt true of large numbers of meat-slaughterers, let us hope of the majority, but the residuum has to be looked to, and that there is such a residuum the annals of

the "slink butchers" show. Even Sir James Crichton-Browne comes under animadversion as exaggerating the defects of private slaughter-houses, and the President boldly challenged a comparison between them and the public slaughter-houses. Another argument was that if these private slaughter-houses were abolished "it would be one of the greatest blows agriculture had ever received," and very few would say in these days that our agriculture required any more blows. There was a strong feeling that as to the sale of meat which was diseased the butchers had just cause of complaint. For years the Federation had been fighting for compensation where tuberculous meat had been surrendered to the authorities for the public good. At present they are liable to penalties, and the relief they want is a warranty between the seller of the livestock and the meat-trader, "a full warranty throughout the United Kingdom." There will occasionally, no doubt, be cases of hardship where beasts sold to the butcher as healthy are found on his stall diseased; but as a rule he is acute enough to distinguish a diseased or doubtful beast. The system of inspection is objected to, as the butcher is not allowed to have an "independent expert" on his side. All these things and a few others no doubt take some of the glamour from the trade of butchering, but the health of the people is the paramount consideration.

Annual Meeting of the Trustees of the Royal Infirmary.

At the annual meeting of the trustees of the Royal Infirmary on Feb. 14th Mr. Cobbitt, the chairman, said that they had every reason to expect that the building would be completed by July 31st; and there was an urgent need for the subscriptions of the general public to be increased. He used an ingenious argument to show that the "district served by the infirmary could well afford to maintain it at the high level necessary, especially considering that following the trade boom of the past few years there should now be accumulated profits at the disposal of the community." Mr. Nevill Clegg, vice-chairman, followed up this appeal by saying that, apart from trade fluctuation, there was wealth enough in the district "to raise twice the sum of £7000 which was now contributed." No doubt this is so, and very little sacrifice on the part of "the general public" would be required to put the infirmary into a sound and satisfactory financial position. At present those who have worked for it so long and strenuously cannot but feel anxious for the future, faced as they are with the certainty of largely increased expenditure and, it is to be feared, a diminished feeling of duty or inclination to give to old-established medical charities.

Early Notification of Births.

The Medical Guild has expressed its strong objection to the Early Notification of Births Act in a letter from Dr. J. H. Taylor (the honorary secretary) to the Manchester papers. One objection is the disregard shown to what the medical profession holds as one of its most sacred duties—namely, "that it shall not divulge any facts learned in a professional capacity." Also that "it so utterly scorns the rights of medical practitioners that they have been completely alienated." Dr. Taylor says it becomes more and more evident that the Act has little chance of proving a success in its present form, and that "it is to the credit of the Manchester council that it has recognised this fact." At the annual meeting of the Guild the following motion was carried:—

That the Medical Guild notes with great pleasure the refusal of the Manchester city council to adopt the Early Notification of Births Act, but, recognising the advantage to be gained in many cases by early assistance being given to nursing mothers by the health authorities, would urge its members and the medical profession generally to facilitate matters to the best of their ability by advising their patients in suitable cases to give early notification of births and to make application for any required assistance to the health department.

Mrs. Ryland's Will.

The provisions of Mrs. Ryland's will have been so widely quoted in the lay press that detailed mention of them here is unnecessary. The bequests to medical charity are substantial, and although the exclusion of the Royal Infirmary from benefit cannot fail to provoke comment the generosity displayed towards the Manchester Eye Hospital, the Dental Hospital, and the Hospital for Incurables is great. Medical men in Manchester also feel that they will have an intimate share in the good that will follow upon the bequest of £50,000 to the University. The largest legacy in the will, £200,000, was left for the up-keep of the John Ryland's Library, Mrs. Ryland's splendid gift to the city.

Feb. 18th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

The Local Government Board in Scotland.

THE Commission recently appointed by the Local Government Board for Scotland to inquire into complaints made concerning the fever hospitals at Falkirk and Ruchill has led to comment that may be useful upon this important Government department. The *Glasgow Herald*, in commenting on the relation of the Local Government Board to the various hospitals for infectious diseases throughout the country, points out, what must be manifest to medical men, that while it is the duty of the Board to inspect hospitals for infectious diseases and to compel local authorities to remove any existing defects the Board does not possess a staff adequate in numbers to undertake such work. The Local Government Board in England has one medical officer who is head of the medical department, one assistant medical officer, and 14 medical inspectors proper, besides two medical inspectors for Poor-law purposes. Ireland has one medical member on the Board and seven medical inspectors. The Local Government Board for Scotland, like the Irish Board, has one medical member but only one medical inspector and one part-time medical officer. Leaving England out of the question, it would appear that although Ireland and Scotland have roughly the same population the former has seven medical inspectors to the latter's one. It has been urged that there should be a regular inspection of infectious hospitals but one medical inspector is quite unfit to undertake a continuous round of such systematic duties as he ought to be engaged in. In Scotland, also, there are 69 poorhouses which must contain in the aggregate a very large number of sick people but the inspection of these is entirely left in lay hands. There is surely some room for improvement here.

Turner Memorial Hospital, Keith.

The annual meeting of the directors of the above hospital was held in the institution in the end of January. A report was read showing that after careful consideration the committee had come to the conclusion that the best use to which the improved finances of the hospital could be put was to make provision for the relief of patients suffering from consumption. A scheme was then approved for the erection of a sleeping shelter in the hospital grounds for the accommodation of two patients, the estimated cost for construction being about £60. In the course of the year 67 patients have been treated in the hospital and of these 43 have recovered, seven improved, eight have died, and nine remained in hospital on Dec. 31st last. The financial report for the year was satisfactory.

The Queen and Glasgow Maternity Hospital.

The Secretary for Scotland has intimated that Her Majesty the Queen has been graciously pleased to accept the office of President of Glasgow Maternity Hospital. It is expected that the new hospital will be opened in April.

St. Mungo's College, Glasgow.

The Lord Provost of Glasgow, Sir William Bilsland, who also occupies the position of chairman of the managers of the Royal Infirmary, visited Liverpool last week in connexion with the question which has arisen as to the future of St. Mungo's College and its relation to the Royal Infirmary. In Liverpool similar difficulties arose regarding medical teaching and were amicably arranged, and it is hoped that the Lord Provost, after consultation with the Lord Mayor of Liverpool, who is a prominent medical man, may be able to suggest a scheme that will prove satisfactory to all parties.

Cancer Research Appointment.

Dr. Archibald Leitch, of the Cancer Research Laboratories, the Middlesex Hospital, London, has been appointed investigator at the Caird Cancer Pavilion of the Dundee Royal Infirmary. Dr. Leitch is a graduate of the University of Glasgow and during the last five years has been engaged in cancer investigation at the Cancer Hospital, London, and later at the Middlesex Hospital Cancer Research Laboratory. He is the author of several papers on the subject, and recently was sent to Paris to inquire into and report on particular methods of treatment there. The new appointment is made under a grant of £1000 a year for five years by Mr. J. K. Caird, Dundee, for cancer research.

Aberdeen Royal Infirmary: Annual Report.

The twenty-first annual report by the directors of the

Aberdeen Royal Infirmary along with the accounts, &c., for the year ending Dec. 31st, 1907, has just been issued. The average number of beds in daily occupation was 226; average number of days in hospital of each patient, 26; operations performed, 1689; and death-rate, 6·9 per cent. in cases treated. The number of in-patients treated (3119) shows an increase of 281 over that of 1906. 15,792 out-patients (including 1606 treated in the electrical department) received advice and treatment. The average cost per occupied bed is £53 9*s.* 2*d.* and of each in-patient £3 17*s.* 6*d.*, as compared with £50 3*s.* 7*d.* and £3 19*s.* 7*d.* respectively for the year 1906. A gift which afforded much gratification was the cheque for £10,000 received from the Right Hon. Lord Mount-Stephen towards the endowment fund. A further addition to this fund was received in the form of a donation of £300 made by the trustees of the late Miss Helen Walker from the residue of her estate. The nursing staff consists of nine sisters and 60 nurses. The candidates for admission numbered 378. Under an arrangement with the governors of the Aberdeen Educational Trust the nurses have had the advantage of a course of instruction in invalid cookery. The days for the admission of patients' friends have been arranged as follows: (*a*) For residents in Aberdeen, Wednesdays and Saturdays from 3 to 4 P.M., and Sundays from 4 to 5 P.M.; and (*b*) for country visitors, every weekday from 3 to 4 P.M., and Sundays from 4 to 5 P.M. At the convalescent hospital 206 cases were treated during the year, the average period of residence being 33 days. The income amounted to £445 and the expenditure to £612. Reference is made in the report to the death of Mr. William Carnie who for the long period of 37 years—from 1861 to 1898—occupied the office of clerk and treasurer to the Royal Infirmary and the Royal Asylum.

Feb. 17th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

Tuberculous Disease in Ireland.

As returned in the last quarterly return of the marriages, births, and deaths in Ireland the total number of deaths from all forms of tuberculous disease registered during the quarter was 2418, representing an annual rate of 2·21 per 1000 of the population of Ireland, estimated to the middle of the year. The rates for each of the three preceding quarterly periods for deaths from all forms of tuberculous disease were 2·76, 2·97, and 2·24 per 1000. The above total—2418—constitutes 13·4 per cent. of all deaths registered during the quarter.

The Health of Belfast.

For the week ended Feb. 8th the death-rate from all causes was the terribly high one of 27·8 per 1000, and from the principal zymotic diseases 3·7. During the week there were notified two cases of typhus fever, four of typhoid fever, 11 of scarlet fever, seven of diphtheria, and eight of cerebro-spinal meningitis. There were (on Feb. 19th) in Purdysburn fever hospital 76 patients. Of these, 21 were suffering from cerebro-spinal meningitis, which the city corporation has decided shall be a notifiable disease for one more year dating from Jan. 1st, 1908.—A deputation of ladies representing the executive of the Belfast branch of the Women's National Health Association of Ireland appeared before the public health committee of Belfast in reference to the aid which they might give in the infantile mortality question. The health committee promised to supply report cards similar to those in use in the health department.

Feb. 19th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Comparative Influence of Intestinal Juice upon Pepsin and Pancreatin.

M. Leoper and M. Esmonet made a communication to the Society of Biology, at a meeting held on Feb. 1st, on the above subject. They had found by experiment that the activity of pepsin diminished by three-quarters under the influence of duodenal juice, by one-half under that of the juices of the ileum, and by a quarter under the influence of the juices of the colon. On the other hand, the activity of the secretion of the pancreas *increases* as regards the power of the trypsin, the steapsin, and the amylopsin in the same proportion for the various regions of the intestine.

The Meal (Farine) of Netté.

Various explorers have noted that the "*farine de Netté*" produced from the fruit of *Parkia biglobosa* is a form of nourishment much appreciated by the natives of tropical Africa; despite its name it is not a meal, for it contains no starch. It is, however, very rich in fat, in phosphates, and in sugar. At a meeting of the Academy of Sciences held on Jan. 27th M. Goris and M. Crété communicated a paper in which they gave the results of some researches which they had made into the alimentary value of this foodstuff. Analysis showed that it was the richest in saccharose of any food which they had come across. Beetroot pulp, for instance, contains from 18 to 20 per cent. of saccharose, and sugar-cane an almost similar proportion, but the substance under investigation contains as much as 25 per cent.

The Hygiene of Dwellings.

Some years ago M. Juillerat, the chief of the Bureau of Hygiene of the Prefecture of the Seine, took up the question of the sanitary arrangement of all the houses in Paris. A new campaign has just been entered upon by the "Ligue Sociale des Acheteurs." This society, which formerly dealt with insanitary houses and the lodges of *concierges*, is now directing its attention to the conditions under which servants are housed. Its members bind themselves only to become tenants of those flats where the rooms allotted to the servants are provided with windows affording proper ventilation and light and where there is a proper apparatus for warming. A list of houses fulfilling these conditions will be drawn up and it will be open to public inspection.

The Treatment of Disease of the Hip joint by Intra-articular Injections.

At a meeting of the Academy of Medicine held on Feb. 4th M. Calot discussed Hip Disease and held a brief for the great superiority of the method of treatment by injection over any cutting operation or simple immobilisation. He claims that it shortens the length of time necessary for treatment by two-thirds and brings about a cure without lameness or even shortening the limb. The treatment is practically identical with that of a cold abscess. If there is no effusion iodoform injections may be used, or still better a solution of naphthol-camphor in glycerine. M. Calot has been using this method of treatment since 1893.

The Thyroid Treatment of Chronic Rheumatism.

At the same meeting of the Academy M. Léopold de Lévi and M. Henri de Rothschild communicated a paper dealing with 39 cases of chronic rheumatism in patients of both sexes, aged from 12 to 15 years. 10 of these cases were of generalised chronic rheumatism, while 9 showed the nodular form with ankylosis and persistent pain. Out of these 19 patients 14 improved greatly, while 2 could be considered as cured. Of the 20 remaining cases who showed the disease in a milder form, 18 improved or were cured. The treatment consisted in the administration of 10 centigrammes of extract of sheep's thyroid from one to three times a day. The effects of the treatment must be carefully watched.

The Poison of Koch's Bacillus Tuberculosis.

At a meeting of the Academy of Sciences held on Feb. 10th Professor Armand Gautier brought forward some researches undertaken by Dr. Auclerc and Dr. Paris on Koch's bacillus tuberculosis. These observers found three distinct poisons in the bacillus—namely, a tuberculin, lecithin, and a special protoplasm poison. This last can be separated chemically and a quarter of a milligramme of it will slowly kill an average-sized guinea-pig by bringing about the same conditions in the lungs as does the bacillus itself.

Arsenic in the Treatment of Syphilis.

At a meeting of the Therapeutical Society held on Jan. 18th M. Bardet put in a strong plea for the use of arsenic in cases of syphilis where mercury is ill borne. He was anxious that the treatment should be tried in hospital, and as he considers that in some cases of syphilis arsenic has a specific action he said that it ought to be tried by itself and not in combination with mercury or the iodides. In the town he thought it would be better given by injection, but in the country, where there might be a difficulty in the

patient going to the medical man or *vice versâ*, it could be given by the mouth in the ordinary manner.

Obituary.

Dr. Peyron, formerly Director of the Assistance Publique and also of the department which dealt with deaf mutes, died last week. He was Director of the Assistance for 14 years, but latterly had retired to Marines in the department of Seine-et-Oise.

Feb. 18th.

COPENHAGEN.

(FROM OUR OWN CORRESPONDENT.)

The Bacteriological Examination of Sputum and Urine.

ALL pathologists know how difficult it often is to find tubercle bacilli in specimens where only a few are present, and those perhaps not uniformly distributed throughout the substance under examination. Researches made by Dr. Ellermann and Dr. Erlandsen and communicated by them to the last meeting of the Copenhagen Medical Society have led to the adoption of a new method which increases the relative number of the bacilli from 10 to 20 times. Sputum is treated as follows: (1) 20 cubic centimetres of sputum are carefully mixed with 10 cubic centimetres of a 0·6 per cent. solution of carbonate of sodium and placed in the thermostat (37° C.) for 24 hours; (2) the sputum is centrifugalised; (3) four parts of a 0·25 per cent. solution of caustic soda are added to the deposit, mixed carefully, and boiled for half a minute; and (4) it is again centrifugalised. Urine is treated somewhat differently to begin with. First, the clear urine is poured off the sediment, which is subsequently centrifugalised. To the resulting sediment four parts of a 0·25 per cent. solution of carbonate of sodium are added with from 25 to 50 centigrammes of pancreatin; it is placed in the thermostat (37°) for 24 hours, and subsequently treated as sputum in directions (3) and (4) above.

A Boycott of the Copenhagen Hospitals.

Danish medical circles have been much interested in the struggle that has arisen between the municipality of Copenhagen and the Association of Junior Medical Men. In order to explain to an English public the object of the conflict and its importance I must in a few words deal with the way in which hospitals are managed in Denmark, as on this point a great difference obtains from what is customary in England. In the first place, hospitals supported by private subscriptions are here practically unknown save some few minor institutions maintained by Roman Catholic religious orders. The Crown supports one (University) hospital with 300 beds, which takes in such patients from the whole country as are considered suitable for the instruction of the medical students. All other hospitals are managed by the different municipalities themselves, the expenses being chiefly defrayed out of the rates. Only a comparatively small amount is paid by the patients or by the sick clubs of which they are members. For a town like Copenhagen this expense forms, of course, rather a heavy item. The municipality of Copenhagen has 440,000 inhabitants and supports ten hospitals with a total of 2900 beds, besides a lunatic asylum of 1400 beds. The total yearly outlay on the hospitals alone (the lunatic asylum not included) is somewhat below £200,000. Of this sum £150,000 a year are paid directly from the rates, the rest being paid by the patients, the clubs, the Crown, and so forth. The other point in which our hospital management differs from English ways is this, that our hospital staffs are not composed of honorary medical officers. Not only are the resident medical officers paid but so also are all the medical men who visit the hospitals. Of course, the salary is highly inadequate, and the Association of Junior Medical Men, which numbers amongst its members all Danish medical men not yet in actual practice as well as all junior medical officers of the hospital staffs, has therefore considered it highly important to try to obtain an improvement in the salaries. A year ago one party of the town council of Copenhagen had at last granted the very modest wishes of the association, but at the final discussion in the council one of the members—I am sorry to say it was a colleague of ours—saw fit to oppose the proposal, which was therefore only passed a few days ago and in a badly modified form. The Association of Junior Medical Men at once resolved to act on the offensive and with the support of the Danish General Medical Association, which latter numbers amongst its members practically all medical men in practice, it has now invited all medical men in Denmark to abstain from applying for appointments in the Copenhagen municipal hospitals. As the profession in Denmark forms one compact body, outsiders being very scarce, and as a great number of appointments in the said hospitals will shortly become vacant, the pressure brought to act on the town council is very strong. In order to insure the proper care of the sick during the struggle the association is offering the municipality to procure any requisite number of locum-tenents, but of course their salary would be the ordinary rather high one paid by the medical men themselves. This boycott certainly smacks of trade unionism, but the time has finally come for the profession to see clearly that this is the only way in which it can maintain its position. It is confidently expected that this struggle will end in a victory for the profession. The outcome of the struggle is all the more important in that very soon the whole medical system of Denmark is to be discussed and altered by a Royal Commission. Other important questions are also pending—e.g., that of the salary of sick club medical officers. If the profession wins in the present struggle the result cannot fail to influence the solution of the other questions in a way favourable to ourselves.

An Interesting Method of Raising Funds for Benevolent Institutions.

Signs are not wanting to show that the Danish National League for Combating Tuberculosis is now nearing it sgoal as far as the establishment of a sufficient number of sanatoriums for the poorer classes of the population is concerned. But while this has been brought about by the work and contributions of a comparatively restricted number of persons throughout the country, the promoters of a scheme for a special children's sanatorium have succeeded in interesting all classes of the community, rich and poor alike, in their object and that in a practical manner. This has been attained by the issue of a special Christmas stamp which for the four last years has been sold at all post-offices (price one farthing) from a little before Christmas until New Year's Eve. Any letter posted in Denmark during that space of time carries besides the ordinary postage one or more of the Christmas stamps. The whole output of the sale of Christmas stamps goes towards the children's sanatorium; it has during the four years reached a total of £20,000, certainly a very good result considering the fact that Denmark only has 2,500,000 inhabitants. This plan might perhaps be adopted by other and greater countries for raising funds for benevolent institutions. The Crown suffers no loss from the scheme as the usual postage has to be paid in ordinary stamps.

Feb. 17th.

VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Special Charges for Dispensing Medicines at Night.

BY an understanding arrived at recently between all the corporations concerned the Society of Apothecaries has given public notice that in future for all prescriptions, with one exception, an extra charge of about 6*d.* will be made if they are dispensed at night time—i.e., after 9 P.M. and before 7 A.M. This extra 6*d.* will be handed over to the fund for the old-age pensions of the apothecaries' assistants. If, however, the medical man adds the letters "E. N." (*expeditio nocturna*) to the prescription it will be free from the extra charge and this is expected in all urgent night cases. As a good many prescriptions and pharmaceutical preparations have been obtained by the public after the usual business hours, and as only the regularly constituted apothecaries are, in this country, allowed to make up prescriptions the abuse has grown very much during the last few years. The raising of the charges for dispensing is not without interest for the medical profession because those village practitioners who have dispensaries of their own attached to their consulting-rooms will also be obliged to charge the increased sum for dispensing at night.

Death of Professor Frühwald.

Professor Frühwald, one of the best known Vienna specialists for children's diseases, died recently. He was a pupil of Professor Widerhofer, from whom he learned the

methods of acute observation and exact diagnosis. In his work on the infectious diseases of childhood and in his investigations on the treatment of rickets his knowledge of the complicated conditions of the growing organism is clearly illustrated. Professor Frühwald was director of the children's department of the Policlinic since 1891 and his lectures were attended by numbers of medical men from all countries, whilst his consulting-room was the meeting place of parents belonging to all classes of society. His health had been giving cause for anxiety since last summer. He had an attack of uræmia six months ago, and kidney trouble led on to cerebral hæmorrhage which finally proved fatal.

Cholelithiasis in Children.

At a recent meeting of the Medical Society Dr. Friedländer showed a boy, six years of age, who had from his second year suffered every few weeks from colic lasting for one or two days. When he passed solid motions these attacks ceased. Later a tumour was made out in the right hypochondrium and as vomiting occurred cholelithiasis was suspected and an operation was performed. The gall-bladder was enormously distended but no reason for the distension was discovered. A year later laparotomy had to be performed again. This time a large calculus was found in the cystic duct. The gall-bladder was removed and the patient was now doing well (ten months after the operation). As regards the earliest age at which cholelithiasis has been known to occur, Dr. Friedjung said that he has seen a biliary calculus in an infant four weeks old, but the condition must be very rare in children, because a case is hardly ever seen in the post-mortem rooms. Professor Naunyn believed that biliary calculi were not uncommon at the age of six years.

A Safe Method of Opening the Abdomen.

At a meeting of the Gesellschaft der Aerzte Professor Lihotzky explained a method of opening the abdomen which was new here although much in vogue in Germany and for which it was claimed that it gave an excellent functional result with a minimum of local disfigurement. It was called the suprasymphysic transverse section of the fasciæ. The incision was from three to four inches long, slightly curved, and extending transversely over the pubes, dividing the skin, subcutaneous tissue, and fasciæ. The latter were then detached from their base upwards and downwards so that the recti and pyramidales muscles were free. The recti muscles were then divided in a longitudinal direction so that they were held only by a thin layer of connective tissue and the transverse fascia and the peritoneum were subsequently incised. This method gave a very ample access to the abdominal and pelvic organs. Tumours reaching up to the umbilicus could be easily removed through the opening. All operations on the uterine adnexa as well as the total extirpation by Wertheim's method and the operative treatment of extra-uterine pregnancy could be easily performed. The closure of the wound was effected in the following manner. The peritoneum and the recti muscles were sutured in the longitudinal direction and the fasciæ and skin in the transverse direction. The sutured wound was covered with gauze, held down by two strips of adhesive plaster. After eight days the sutures in the skin were removed, after which the patient might be out of bed without any abdominal belt. The cosmetic defect of the scar was soon concealed by the hair growing over it, especially if the incision was not very large, whilst the transverse scar was not liable to become stretched with formation of ventral hernia. This functional superiority of the horizontal incision over the vertical one has been proved by many hundreds of cases in Germany and also in Austria. The method was also available for a bilateral Bassini operation if the angle of the incision was drawn well to the side by means of a blunt hook.

Excision of a Pad of Fat from the Abdominal Wall.

Professor Eiselsberg had recently under his care a man, 25 years of age, a waiter, who was not able to sit down on account of the fat on his abdominal wall. The patient's general conformation presented a juvenile type. All the epiphyses were in loose connexion with the diaphyses, the genital organs were infantile, and there was extensive lipomatosis. As the accumulation of fat was a hindrance to the patient in his occupation he was operated upon with a view of removing as much as possible of the superfluous tissue. Within 15 minutes six kilogrammes (13 pounds) of fat were removed and the patient had an uninterrupted recovery. This was the largest amount of fat intentionally excised of which there was a record where general lipomatosis was the indication, but in operations for hernia even larger quantities have been removed.

Feb. 17th.

BUDAPEST.

(FROM OUR OWN CORRESPONDENT.)

Industrial Accidents in 1907.

SINCE the coming in force of the Workmen's Compensation Act the necessity of exhaustive accident statistics is felt more and more. Francis Kossuth, Minister of Commercial Affairs, has endeavoured to fill this gap by publishing a detailed list of the industrial accidents in 1907. According to this list there were 18,962 accident cases notified in Hungary during that year, showing an excess of 407 in comparison with the previous year. Out of all accidents only 1170 befell women owing to the comparatively small number of working women in Hungary and to the fact that those occupied with work are mostly employed at home. While out of 1000 male workers 39 suffered from accidents, out of 1000 female workers only 17 were in the like case. More than four-fifths of the injuries caused incapacity to work, lasting less than four weeks. Persistent partial incapacity was caused by 257 accidents. Persistent entire incapacity occurred in 19 cases. Fatal accidents were 225 in number. In more than four-fifths of the accident cases the limbs were injured. In factory work there were ten times as many accidents as in small industries. The working days lost by the accidents amounted to something over 300,000.

A School for Mothers.

To teach mothers how to preserve their children from infective diseases and how to nurse them when healthy or ill a school was opened in Budapest last year and has had an immense success. Every lecture (delivered by voluntary lecturers) was attended by audiences consisting of from 1200 to 1300 mothers. The first lecture was delivered this year in the town-hall by Dr. F. Torday, chief physician of the State Foundling Home. The title of his lecture was: "The Preservation of the Health of the Future Generation; the Prevention of Tuberculosis and Scrofulosis." The entrance to these lectures is free and men are not admitted. The order of the lectures is as follows: Dr. Presich lectures on Rickets; Dr. Wein on the Bodily Education of Children at Home; Dr. Deloe on the Essentials of the Infective Diseases and their Prophylaxis; Dr. Berend on the Nutrition of Infants; and Dr. Schaffer on the Mental Training of Children. The good effect of this school is shown by the following declaration of the wife of a State official. "The frequenting of the lectures of the 'School for Mothers' is exceedingly useful for us. We learn there different things, amongst them one thing particularly—in case of emergency not to cry and rub our hands but to send for the doctor immediately, and then such disaster as I was unfortunate enough to survive will be avoided. About two years ago my baby (aged one year) was attacked by cramps. His face became bluish and the eyes turned upwards. The instruction of the grandmother was of no use; the child did not regain consciousness. The blue tint of the face changed to mortal paleness; the baby's glassy eyes showed that he was dead. We began to cry bitterly; baby was really dead. Later I learned that a medical man might have saved him by applying artificial respiration. Such a mishap will never occur in a family where the mother has gained such useful information as we gathered in the School for Mothers."

Medical Men's Hours of Consultation.

Dr. Lenard advises his *confrères* in the *Orvosok Lapja* to quit the old custom of remaining at home to receive patients in the afternoon. This, he says, has many disadvantages for medical men. First and foremost the practitioner is occupied thus during the whole day. He sees his patients at that time (forenoon) when patients generally are at their easiest. The temperature is highest in the afternoon and lowest in the morning hours. By keeping office hours between 8 and 10 A.M. he can execute all the calls which arrive during this time. Then making the out-door visits till 2 P.M. (remembering that the severer cases should be left till after 12 noon) he sees his patients at the time when their temperature is rising. After 2 P.M. he is free and can

enjoy the rest of the day. This fact, particularly in summer time, is very valuable considering the possibility of making excursions and attending outdoor amusements.

The Taxation of Secret Medicines and Cosmetics.

Vilmos Szigethy, a financial expert, has submitted a proposition to the Minister of Financial Affairs wherein he advises the taxation of all cosmetic and hygienic specialities. He shows that most of these substances are articles of luxury on which the manufacturers make immense profits, considering the fact that their production often costs less than the bottles and boxes wherein they are packed. The statistical returns of the last five years' imports of these articles prove that during this time £500,000 worth of perfumery and cosmetics and £800,000 worth of ready-made pharmaceutical preparations were imported into Hungary. The import increases from year to year. The demand is very large considering the fact that in Hungary itself cosmetics to the value of about £1,000,000 are manufactured. Szigethy quotes sad instances showing how detrimental these conditions are to the respectable druggists. He proposes to impose a tax on all cosmetics and secret medicines amounting to 25 per cent. of the sale price of the same. The proposal will be brought before the Legislature.

Calomel in the Treatment of Tuberculosis.

In a lecture delivered before a provincial medical society Dr. Bucsányi said that calomel has an almost specific action on phlyctenular conjunctivitis and on lupus tubercles. As it has such a particularly good effect on local tuberculous affections he has used it also for pulmonary tuberculosis in the form of inhalations. The method of administration is as follows: above a spirit lamp he puts a sheet of tin, and strews over it from 1 to 2 grammes of calomel (*via humida paratum*). In a few minutes the calomel is converted into a white, odourless vapour which is inhaled by the patient. These inhalations may be carried on for several weeks without the least harm to the patient. Dr. Bucsányi did not observe diarrhœa, salivation, or loss of appetite. He has applied this treatment in seven cases already and is satisfied with the results.

Feb. 13th.

CANADA.

(FROM OUR OWN CORRESPONDENT.)

United States and Canadian Methods of Health Inspection of Immigrants Compared.

IN a report recently issued by Dr. P. H. Bryce, of the Department of the Interior in the Canadian Government, this officer, who has had charge of the inspection of immigrants, states that the Canadian Act provides conditionally that otherwise desirable immigrants suffering from some curable disease may be detained for treatment, while the Act of the United States not only excludes persons suffering from loathsome and contagious diseases of a chronic type but further levies a fine upon the vessel carrying them if there is reasonable ground to suppose that the disease could have been detected before embarkation. In the case of Canada no immigrant shall be permitted to land in this country who is feeble-minded, an idiot or epileptic, or who is insane or has had an attack of insanity within four years. In this respect the United States Act is precisely the same. The chief difference in the laws of the two countries regarding the exclusion of undesirables is that the United States prohibits polygamists and anarchists from entering the country, while the immigration laws of Canada do not discriminate against these classes. The laws of Canada exclude the deaf, dumb, and blind, unless the immigrant so affected belongs to a family which will give security for his permanent support. From the United States are debarred persons who are undergoing a sentence for correction in their own country for crimes other than political, or whose sentence has been remitted conditional on their emigration. Canada is lax in this respect. The percentages of deportations in the two countries for the past nine years to the total immigrations show a higher ratio in the United States than in Canada. Of the British immigrants only 1 in 1003 is deported, while amongst those from the continent 1 in every 237 is deported from Canada. Of the latter the highest deportations are amongst Italians.

Annual Report of the Royal Victoria Hospital, Montreal.

There were admitted to the wards of the Royal Victoria Hospital during the year 1907 3398 patients, a decrease of 46 from the previous year. Of these 1994 were Protestants, 1071 were Roman Catholics, 290 were Hebrews, and 43 were of other faiths. The free patients numbered 1656 and the public ward patients 1280, and there were 462 private patients. Of the total number 2473 were residents of Montreal. The total days of hospital treatment aggregated 81,902, as against 73,993 for the previous year. The average number of days' stay in hospital per patient was 24·10, as against 22·04 for the previous year. On Jan. 1st, 1907, there were 224 patients in the hospital remaining from 1906, and during the year 3404 were discharged, of whom 1897 were well, 1002 were improved, and 165 were not improved, while 123 were not treated and 217 died. There remained in the hospital on Dec. 31st, 1907, 218. Of the 217 deaths 71 took place within 48 hours of admission. The death-rate for the year has been 6·81 per cent., or, if those dying within 48 hours of their admission be deducted the rate would be 4·58 per cent. In the 14 years during which the hospital has been in existence it has treated 36,524 patients. In the out-patient departments during 1907 there were treated 4156 patients, the number of visits of these aggregating 27,399 consultations. The income for the year amounted to $168,381, while the ordinary expenditure amounted to $146,610. The total cost per day per patient has been $1.79.

Retirement of the Dean of the Laval Medical Faculty.

Dr. Jean Philippe Rottot, for many years dean of the medical faculty of Laval University, Montreal, has retired from this honourable post. Dr. Rottot was born in 1825 and graduated from the old Victoria College, Montreal, and was admitted to the practice of medicine in 1847. In 1850 he was given the chair of botany at Victoria College, which he left in 1878 to enter Laval University. Two years after he succeeded Dr. Pierre Beaubien in the chair of pathology, and when the Notre Dame Hospital was founded he was made head of the clinical department. In 1891 Dr. Rottot was given the deanship of the medical faculty of Laval University, which he has retained until the present time. His departure from the University is deeply regretted by both professors and students.

British Association for the Advancement of Science in Winnipeg in 1909.

Considerable progress has been already made with the arrangements for the meeting of the British Association for the Advancement of Science in Winnipeg in 1909. This will be the fourth time in 70 years that the Association has met outside the British Isles. The first occasion was in 1884 when the meeting took place in Montreal; the second in Toronto in 1897; and the third in South Africa in 1905. The Dominion Government has promised a grant of $25,000 towards the expenses of the meeting and the local executive will collect $50,000 for the entertainment of the visitors. The meeting will probably be held on August 25th and following days. Professor M. A. Parker, University of Manitoba, Winnipeg, Manitoba, is the honorary local secretary.

Violent and Sudden Deaths in Montreal in 1907.

According to the official report of Coroner MacMahon of Montreal there were 785 deaths in that city due to violence in 1907. Altogether 83 persons were killed by railways, of which deaths 60 were due to steam railways and 23 to street cars. Fire was responsible for the deaths of 44 persons, including 17 children and one teacher in a school fire. There were 12 homicides, 27 suicides, and 53 drowning accidents. The sudden deaths were 217. An automobile was responsible for one death.

Feb. 6th.

ROYAL SOCIETY OF MEDICINE: THERAPEUTICAL AND PHARMACOLOGICAL SECTION.—A conversazione of this section to which ladies are invited, will be held in the Apothecaries' Hall, Blackfriars, E.C., on Tuesday, Feb. 25th, at 4.30 P.M. An address will be given by Dr. Harry Campbell on the Therapeutics of Diet; there will also be demonstrations of electrical apparatus, colour photography, and an exhibition of instruments, drugs, and foods. Admission will be by signature or card of a Fellow of the society or a member of the section.

Obituary.

SIR JOHN DENIS MACDONALD, K.C.B., M.D. ST. AND., M.R.C.S. ENG., F.R.S.,

INSPECTOR-GENERAL R.N. (RETIRED).

ON Feb. 7th there passed away at Southsea, full of years and honour, one of that distinguished band of men of science who notably advanced the study of biology during the middle of the last century by its eager pursuit in deep waters. Sir John Denis Macdonald's services to science gained him the Fellowship of the Royal Society and his services to the navy won him a Knight Commandership of the Bath of the military division. He was born in 1826 and was the son of Mr. James Macdonald, an artist of Cork, a parentage which in some measure shaped his own subsequent tastes. He was educated privately and subsequently entered the Cork School of Medicine; his medical career, however, owed something to all three divisions of the British Isles, for he studied at King's College, London, and derived his M.D. in 1867 from St. Andrews. He qualified M.R.C.S. Eng. 18 years earlier and in the same year (1849) entered the Royal Navy as an assistant surgeon. His scientific tastes and faculty for classification at once gained him the post of curator to the Plymouth Hospital Museum and his bent also lay to the personal cultivation of the fine arts, a combination of tastes in a man of science as welcome as it is rare. Three years later H.M.S. *Herald* was commissioned for exploring and surveying work in the South Pacific, and Macdonald was gazetted to assist in the second of the great British marine explorations of the last century, 20 years later than Darwin had made his historical voyage in the *Beagle* and 20 years before Wyville Thomson won another laurel for British science in the *Challenger*. It may fairly be said that Macdonald's work ranks with that of those men and he pursued it unremittingly for seven years, bringing within the focus of his microscope many thousands of forms of marine life which had been netted and dredged. The value of his work was recognised in England and when he returned in 1859 at the early age of 33, he was made a Fellow of the Royal Society. In 1862 the sister society of Edinburgh awarded him the Macdougall-Brisbane medal, and gaining steady promotion in his service he was elected professor of naval hygiene at the Netley School in 1866, a post which he held for nine years. In 1871 he obtained further distinction in the shape of the Sir Gilbert Blane medal. His next promotion was in 1875, when he became a deputy inspector-general of hospitals and fleets, and in 1883 inspector-general to the Royal Naval Hospital at Stonehouse. He only held this post for three years, as he retired from the service in 1886. His knighthood was conferred upon him in 1902, and he has since lived in retirement.

Macdonald's contributions to literature included "An Analogy of Sound and Colour," published in 1869; "Outlines of Naval Hygiene" in 1881; "A Guide to the Microscopical Examination of Drinking Water" in 1883; the article on Yellow Fever in the first volume of Reynolds's System of Medicine in 1866; and various papers on biological matters in the Transactions of the Royal Societies of London and Edinburgh and of the Linnean Society. He maintained his interest in microscopy, music, and painting until the last. He was a man of distinguished appearance and fine culture and his death has removed another of the few remaining leaders of science of the nineteenth century.

Sir John Macdonald was twice married, first in 1863 to Sarah Phœbe, daughter of Mr. Ely Walker, of Stanary House, Stainland, Yorks; this lady died in 1885; and secondly to Erina, daughter of the Rev. William Archer, who also predeceased him. He leaves two sons and two daughters and had resided with one of the latter, who is married to Mr. W. R. Meyer of Hurstpierpoint in Sussex, for the last ten years.

JOHN HENRY GALTON, M.D. LOND., M.R.C.S. ENG., L.S.A.

WE regret to announce the death of Dr. John Henry Galton, which took place at his residence, Chunam, Upper Norwood, on Feb. 7th. He was well known to several branches of the profession as a man who had always laboured to support its best interests; indeed, his fatal illness was directly due to his unwisely attending a meeting of the Council of the British Medical Association some ten days before he died, which was the occasion of his taking a chill resulting in a fatal bronchitis. For the last two years his heart and kidneys had shown signs of failing and last summer, after a visit to Aix-les-Bains, he broke down badly, but with rest and careful treatment he was able to be about again, though not enough to satisfy a man of his active disposition. Dr. Galton was the son of Dr. Edmund John Galton of Brixton Rise and was born in 1840; he was educated at Chatham House School, Ramsgate, and entered Guy's Hospital before he was 16 years old. He had a successful career as a student and in 1861 he obtained the qualifications of L.S.A. and M.R.C.S. Eng., and in the same year the degree of M.B. at the University of London, with the gold medal in midwifery, his M.D. following a year later. He served as house surgeon at his own hospital and then became resident medical officer at the Carey-street Dispensary. After these close years of London life he was attracted by the prospect of travel and obtained the surgeoncy of the Hudson Bay Company's vessel the *Prince Arthur*. He only made one voyage in her, however, and then turned his steps to the East, settling down in China, at Foochow, where he obtained the official medical appointments to H.B.M. Consulate, the gaol, and H.I.M. Customs. These posts gave him an opportunity of acquiring a wide practical knowledge especially of surgery, to which he had been early attracted. He operated freely on cases of elephantiasis. He was not to spend his days in a foreign land, for in five years he decided to return to England, and shortly after he had done so he married and settled down at Anerley in partnership with Mr. J. Sidney Turner, a partnership which was only terminated at the end of last year. He became one of the leaders of the medical profession in his district and in 1882 was largely interested in helping to found the Norwood Cottage Hospital, of which he was one of the original honorary surgeons, and to which he was appointed consulting surgeon on his retirement when his health first began to give way. He was also surgeon to the Anerley Dispensary and Lying-in Charity and his interest in gynæcology is evidenced by several contributions which he made to our columns between 1884 and 1887 dealing with cases of Cæsarean section and ovariotomy. It has been mentioned that he was at the time of his death a member of the council of the British Medical Association, of which he was a prominent supporter, having held the post of President of its South-Eastern Branch. He was the originator of the movement in favour of admitting medical women to the Association, and the successful issue of that movement was largely due to his powerful advocacy. Another valuable medical institution to which he gave his whole-hearted labour and support was Epsom College, with which his official connexion began in 1885, when he was elected a member of the council, and his interest in its affairs has been actively maintained. Until within the past few months, when continued ill-health prevented him from attending at the office in Soho-square, he rarely failed to be present at council and committee meetings and he was specially devoted to the benevolent side of the institution. Many a widow and orphan will miss his kindly interest in their cases, for he took a genuine interest in assisting by his votes those candidates whom he knew personally to be deserving of support, especially when, as sometimes was the case, they were the relatives of an old professional friend. In 1902 he was elected a vice-president of the institution in recognition of his having collected a sum of over £1000 in aid of the foundation attached to the college, and subsequently he was elected chairman of the finance and works committee, which offices he had to resign within two years in consequence of persistent ill-health. Whilst chairman of the works committee he took a leading part in the work of bringing the drainage system and the sanitary arrangements at the college to their present excellent condition at a total cost of £8000 and he paid frequent visits to the college as long as he was able to travel about. He originated the idea of providing the boys with the "Holman" art and reading room, which was erected out of contributions collected entirely by himself, to commemorate the services rendered to the college by his old friend Sir Constantine Holman, M.D., who then held the office of treasurer. These two were also closely associated in the work of the Surrey Medical Benevolent Society for very many years, Sir Constantine Holman holding the office of president and Dr. Galton the office of treasurer. His death cannot but be felt keenly by all who are

interested in the welfare of Epsom College, which he did so much to promote.

Dr. Galton leaves a widow and five daughters. The funeral took place at Shirley cemetery on Feb. 11th. The ceremony was largely attended by old friends and patients and many medical men from London and his neighbourhood, amongst those present being Mr. Edmund Owen, Mr. Frederic Durham, Dr. Henry Hetley, Mr. J. B. Lamb (secretary of Epsom College), Mr. G. C. Parnell, Mr. J. Sidney Turner, and Mr. E. Reynolds Ray.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Martin Bloch, formerly assistant to the late Professor E. Mendel of Berlin, aged 41 years.—Dr. Ferdinand Albert Thierfelder, professor of general pathology and pathological anatomy in Rostock, aged 65 years.—Dr. Karl von Voit, professor of physiology in the University of Munich, at the age of 67 years.—Dr. A. Polotebnoff, formerly professor of dermatology in the St. Petersburg Military Medical Academy.—Dr. Adrian T. Woodward, formerly professor of gynæcology in the University of Vermont.—Dr. Sirus-Pirondi, formerly professor in the Marseilles Medical School.—Dr. Robert W. Taylor, formerly professor of the diseases of the urogenital organs in the New Yokr College of Physicians and Surgeons.—Dr. Hermann Matersdorf of Dresden, who is said to have been the senior member of the profession in Germany, at the age of 98 years.—Dr. Michael van Puteren, formerly *privat-docent* of children's diseases in the St. Petersburg Military Medical Academy.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—The Comitia of the Royal College of Physicians on Jan. 30th conferred Licences to practise upon the following gentlemen who had completed the Final Examination of the Examining Board in England in Medicine, Surgery, and Midwifery, and the Council of the Royal College of Surgeons conferred the Diploma of Member upon the same gentlemen on Feb. 13th:—

Alexander Charles Anderson, Cambridge University and St. Thomas's Hospital; Charles Ernest Anderson, King's College Hospital; Arthur George Atkinson, B.A. Cantab., Cambridge University and St. George's Hospital; Tobias Rustat Hemsted Blake, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Harry Blakeway, B Sc. Lond., St. Bartholomew's Hospital; Stanley Leemore Brimblecombe, St. Mary's Hospital; John Philip Buckley, B.A. Cantab., Cambridge and Manchester Universities; William Alexander Burr, M.D. Toronto, Toronto University and London Hospital; Howard James Barrell Cane, B.A. Cantab., Cambridge University and Guy's Hospital; Ernest Patrick Carmody, St. Bartholomew's Hospital; Arthur John Wellington Cunningham, B.A. Cantab., Cambridge University and St. Bartholomew's Hospital; Sidney Trevor Davies, St. Bartholomew's Hospital; Bernard Day, B.A. Cantab., Cambridge University and St. George's Hospital; Arthur Ffolliott William Denning, Guy's Hospital; Alban Dixon, St. Mary's Hospital; John McDougall Eckstein, St. Bartholomew's Hospital; John Everidge, Durham University and King's College Hospital; Arthur Leslie Foster, Guy's Hospital; Herbert Gall, St. Bartholomew's Hospital; Eric Worsley Gandy, B.A. Cantab., Cambridge University and Westminster Hospital; Eric Gerald Gauntlett, King's College Hospital; William Gilliatt, Middlesex Hospital; Harold Delf Gillies, Cambridge University and St. Bartholomew's Hospital; Gathorne Robert Girdlestone, B.A. Oxon., Oxford University and St. Thomas's Hospital; Alexander Edward Gow, St. Bartholomew's Hospital; *John Lawrence Graham-Jones, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Archibald Hamilton, B.A. Cantab., Cambridge University and St. Mary's Hospital; Charles Thomas Hawkins, University College, Cardiff, and St. Mary's Hospital; Claud Anthony Holburn, Sheffield University; Nelson West Jenkin, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Gordon Ley, London Hospital; Edward Leslie Martyn Lobb, Guy's Hospital; Dermot Loughlin, London Hospital; Alexander Todd McCaw, New Zealand University and London Hospital; Donald Macrae, London Hospital; Claude Herbert Marshall, Guy's Hospital; John Birch Martin, Guy's Hospital; Thomas Mackinlay Miller, St. Bartholomew's Hospital; Roderick Joseph Graham Parnell, University College, Bristol, and King's College Hospital; Eustace Macartney Parsons-Smith, St. Thomas's Hospital; Hubert Pinto-Leite, B.A. Cantab., Cambridge University and St. George's Hospital; Horace John D'Arcy Gerard Price, Birmingham University; Robert Bernard Price, St. Bartholomew's Hospital; Joseph Francis Engledue Prideaux, University College Hospital; Edward John Joseph Quirk, Charing Cross Hospital; Percy Charles Raiment, London Hospital; Roland Waters Rix, St. Thomas's Hospital; Harold Trenchard Rosaiter, St. Thomas's Hospital; Mulk Raj Sawhney, St. Bartholomew's Hospital; Francis Charles Searle, St. Bartholomew's Hospital; Leonard Whittaker Sharp, B.A. Cantab., Cambridge University and London Hospital; *Charles Harold Smith, M.B. Liverp., Liverpool University; Frank Harold Stephens, St. Mary's Hospital; Hugh Stott, Guy's Hospital; Gilbert Francis Syms, Guy's Hospital; Wilfrid Reginald Taylor, St. Mary's Hospital; Ernest William Toulmin, St. Mary's Hospital; Nusserwanji Hormasji Vakeel, Bombay University and St. Bartholomew's Hospital; Cuthbert Ferguson Walker, B.A., Royal University of Ireland, Galway, Belfast, and St. Mary's Hospital; Alan Geoffrey Wells, St. Mary's Hospital; Ernest Godfrey Wheat, Cambridge University and King's College Hospital; James Norman Wheeler, B.A. Cantab., Cambridge University and St. Thomas's Hospital; Edward Barton Cartwright White, London Hospital; William Cecil Wigan, Oxford University and St. Bartholomew's Hospital; Cyril Oswald Oxford Williams, St. Bartholomew's Hospital; Rajaiya Robert Williams, L.R.C.P. & S. Edin., Edinburgh, Madras, and University College Hospital; John Samuel Williamson, St. Bartholomew's Hospital; and William Louis René Wood, L.S.A. Leeds University.

* Diplomas of M.R.C.S. were conferred upon these gentlemen on Jan. 16th.

Diplomas in Public Health have been granted to the following gentlemen:—

Robert Cecil Turle Evans, L.S.A., University College Hospital; Ernest Edward Scott Joseph Galbraith, L.R.C.P. & S. Edin., L.F.P.S. Glasg., Queen's College, Cork, and London Hospital; William Henry Hillyer, M.D. Durh., L.R.C.P., M.R.C.S., Vienna and St. Thomas's Hospital; Wharram Henry Lamplough, M.D., B.S. Durh., L.R.C.P., M.R.C.S., Durham University and St. Bartholomew's Hospital; Arthur Rieussett Littlejohn, L.R.C.P., M.R.C.S., St. Mary's and University College Hospitals; James Mair, M.B., C.M. Glasg., Glasgow University and London Hospital; Fairlee Russell Ozzard, Major, I.M.S., L.R.C.P., M.R.C.S., London Hospital; George Elliott Frank Stammers, Captain, R.A.M.C., L.R.C.P., M.R.C.S., University College, Bristol, and Royal Army Medical College; James Batson Stephens, M.B., B.S. Lond., L.R.C.P., M.R.C.S., St. Mary's and University College Hospitals; and John Tate, L.R.C.P., M.R.C.S., University College Hospital.

The Council of the Royal College of Surgeons of England also conferred the Licence in Dental Surgery upon Harold Walker, Guy's Hospital, who has passed the examinations and complied with the necessary by-laws.

UNIVERSITY OF CAMBRIDGE.—A change in the regulations for the M.B. degree has been made and it has been decided to hold three examinations for the first M.B., two as at present in June and December and a third early in the October term. By this change a student who is well prepared will be able to pass the first M.B. on coming up and to begin on the courses in anatomy and physiology at once. Also a student who just fails to pass the examination in June will have a chance of passing in the following October instead of waiting till December.—The following degrees were conferred on Feb. 13th:—

M.D.—G. G. Ellett, Catharine.
M.B., B.C.—L. J. Austin and D. W. Roy, Sidney Sussex.
M.B.—D. Holroyde, Trinity.

UNIVERSITY OF LONDON.—At the Intermediate Examination in Medicine held in January the following candidates were successful:—

John Wroth Adams, St. Bartholomew's Hospital; Francis Cooke Alton, St. Thomas's Hospital; Kathleen Jane Armstrong, London (Royal Free Hospital) School of Medicine for Women; Edwin Augustus Attenborough, London Hospital; †Cyril Banks, University of Sheffield; Maurice Beddow Bayly, Charing Cross Hospital; Claude Alexander Birts, University College; Kenneth C. Bomford, St. Bartholomew's Hospital; Kenneth James Charles Bradshaw, University of Liverpool; Frederick Leslie Brewer, University College; †Edward Spencer Calthrop, Charing Cross Hospital; Sydney James Clegg, Victoria University of Manchester; Guy Barton Cockrem, Guy's Hospital; Ardeshir Koyajt Contractor, University College; Grace Marion Cordingley, London (Royal Free Hospital) School of Medicine for Women; Goronwy Meredith Davies, St. Thomas's Hospital; Frederick Adolph Dick and John Adamson Edmond, Guy's Hospital; Reginald Robert Elworthy, Westminster Hospital; Thomas Charles Cann Evans, St. Mary's Hospital; Archibald Ferguson, St. Bartholomew's Hospital; Violet Evangeline Fox, London (Royal Free Hospital) School of Medicine for Women; Walter Egbert Fox, Guy's Hospital; Thomas Woodcock George and Charles Gibson, London Hospital; Katherine Anne Gill and Edith Croft Goodison, London (Royal Free Hospital) School of Medicine for Women; Charles D'Oyly Grange, University of Leeds; Hugh Arrowsmith Grierson, University of Liverpool; Henry Pollard Hacker, B.Sc., King's College; Arthur William Havard, London Hospital and University College, Cardiff; Reginald Melville Hiley, University College, Bristol; Henry Hingston, King's College; Harrie Marguerite Hood-Barrs, London (Royal Free Hospital) School of Medicine for Women; Edward Leslie Horsburgh, Victoria University of Manchester; Thomas Lewis Jones, Guy's Hospital; *†Norman Claudius Lake, Charing Cross Hospital; Frederick Norton H. Maidment, London Hospital; Kenneth D. Marriner, St. Thomas's Hospital; Guy Matthews, King's College; James Menzies, St. Mary's Hospital; Raymond Montgomery, University of Leeds; Adrian Leonard Moreton, St. Bartholomew's Hospital; George Edmund Eyre Nicholls, Victoria University of Manchester; Alexander Croydon Palmer, London Hospital; Helen Lawson Peacock and Cicely May Peake, London (Royal Free Hospital) School of Medicine for Women; Edward Austen Penny, Guy's Hospital; Morna Lloyd Rawlins, London (Royal Free Hospital) School of Medicine for Women; Arnold Renshaw, Victoria University of Manchester; Harold Ferdinand Renton, University of Leeds; Maude Margaret Richards, London (Royal Free Hospital) School of

Medicine for Women; Cecil George Richardson, King's College and Westminster Hospital; Edward Hesketh Roberts, University College; Arthur Denys Rope, Middlesex Hospital; David Scurlock, St. Mary's Hospital; Edward Albert Seymour, St. Thomas's Hospital; Robert Stout and ‡Graham Yalden Thomson, Guy's Hospital; Marjorie Edith Wagstaff, London (Royal Free Hospital) School of Medicine for Women; Ernest White, St. Bartholomew's Hospital; ‡William Stanley Wildman, London Hospital; and Charles Witts, Guy's Hospital.

The following candidate having qualified in organic chemistry has now completed the Intermediate Examination in Medicine:—

Phirozshaw Cooverji Bharucha, University College.

* Distinguished in Anatomy. † Distinguished in Physiology.
‡ Distinguished in Pharmacology.

N.B.—This list, published for the convenience of candidates, is issued subject to its approval by the Senate.

UNIVERSITY OF OXFORD.—The following have been re-elected members of the Board of the Faculty of Medicine: J. R. Magrath, D.D., Provost of Queen's College; F. A. Dixey, D.M., Fellow of Wadham College; A. L. Ormerod, D.M., New College; W. Bruce Clarke, B.M., Pembroke College; and A. P. Parker, B.M., Magdalen College.

THE TREATMENT OF STAMMERING AT ELEMENTARY SCHOOLS.—In our issues of Oct. 19th and Nov. 16th, 1907, we commented on the success which had been obtained in the treatment of stammering in children attending elementary schools, the instructors being Mr. W. A. Yearsley in Darwen and Miss Mona Clay and Professor Berquand in Manchester. Mr. Yearsley employs what he calls the "auto-phonic" system; it commences with "breathing exercises," after which come vocal gymnastics, and then a combination of vocal, breathing, and physical exercises, together with dumb-bell practice. The course of instruction lasts for about six weeks. The system has received the approval of the education authority in Radcliffe, Lancashire, where a class was formed of 23 boys and nine girls, all of whom suffered from stammering, stuttering, or defective articulation. Dr. D. P. M. Farquharson, the medical officer of health of Radcliffe, in a report presented to the education authority, gave a very favourable account of the results, and eight weeks after the termination of the instruction the education committee on putting the children to practical tests found that the improvement was well maintained.

MEDICAL INSPECTION OF SCHOOL CHILDREN IN SUSSEX.—The West Sussex county council had before it at its meeting on Feb. 7th the application of the West Sussex education committee for the appointment of a county medical officer for the purpose of working and supervising and, as far as possible, performing the duties required by the Act. The finance committee of the county council recommended that the education committee should be empowered to proceed with its proposals upon the estimate submitted—viz., £675 per annum. Considerable objection was raised, it being considered inexpedient for the education committee to appoint a medical officer, as it was considered that those duties could, and should, be carried out in intimate conjunction with the public health authorities under the direct supervision of their own medical officers of health. Another objection was that there were enough inspectors going about already and that if the education committee appointed a man he would be a specialist, "and specialists are always men of narrow minds," to use the councillor's own words. But beyond being emphasised the various objections were not put to the vote, and in the result the committee's recommendation was carried. At a subsequent meeting of the education committee, however, it was announced that Mr. E. I. Bostock of Horsham, who has recently retired from practice, had offered to carry out, without remuneration, the duties until the committee had made further arrangements. This offe was accepted as an experiment, the chairman remarking that, of course, the committee would give Mr. Bostock an honorarium.—Acting upon the advice of Dr. A. Newsholme, the late medical officer of health of the borough, the Brighton town council on Feb. 6th decided to appoint a whole-time medical officer to carry out the medical inspection of schools under Section 13 of the Education (Administrative Provisions) Act, 1907. There are 18,000 children in the elementary schools of the town, and the council, reckoning that of this number 6000 will require to be inspected medically annually, decided that the salary should be at the rate of one shilling per head per inspection, or £300 per annum. At the same meeting it was decided to appoint an additional school nurse at a salary of £90 or £100 per annum.

CHELSEA CLINICAL SOCIETY.—The annual dinner of this society will take place at the New Gaiety Restaurant, Strand, on Thursday, Feb. 27th, at 7.45 P.M. All information concerning dinner tickets and tickets for guests can be obtained from Dr. K. R. Collis Hallowes, 104, Buckingham Palace-road, London, S.W.

CLIFTON DISPENSARY.—The annual meeting of the subscribers to this institution was held on Feb. 4th. The medical report stated that during 1907 there were 3149 patients treated (including 67 cases of midwifery), as compared with 3612 in the previous year. The financial statement showed a small unfavourable balance.

BRISTOL EYE HOSPITAL.—The annual meeting of the subscribers to this hospital was held on Feb. 5th under the presidency of the Lord Mayor. The annual report stated that during 1907 the in-patients numbered 513, being 59 in excess of the previous year; and that 7337 out-patients had been treated as compared with 6805 in 1906. The financial statement showed an unfavourable balance of £537.

METROPOLITAN ASYLUMS BOARD.—This Board at a recent meeting decided to increase the remuneration of medical superintendents in the hospitals as follows: Salary (1) commencing at £500 per annum and rising by four annual increments of £25 to £600 per annum, and thence by two further annual increments of £50 to £700 per annum; and (2) after the expiration of ten completed years of service as a medical superintendent to rise from £700 per annum by £50 annually to a maximum of £800 per annum. The emoluments consist of unfurnished house (or furnished apartments) and washing. The salary hitherto assigned to a medical superintendent commenced at £400 and rose annually by £25 to a maximum of £700 per annum with emoluments of unfurnished house (or furnished apartments), washing, fire, and lighting.

UNIVERSITY OF SHEFFIELD.—The Council of the University has appointed Mr. John L. Annan, M.B., Ch.B. Edin., to the post of Demonstrator in Anatomy. Dr. Annan is at present Demonstrator of Anatomy in the University of Edinburgh and house physician in the skin wards of the Edinburgh Royal Infirmary. The Council has also appointed the following gentlemen to the newly instituted clinical tutorships: Mr. Miles H. Phillips, M.B, B.S. Lond., F.R.C.S. Eng., in Obstetrics and Gynæcology; Mr. Graham S. Simpson, F.R.C.S. Eng., in Surgery; and Mr. A. E. Barnes, M.B. Lond., M.R.C.P. Lond., in Medicine. Dr. Phillips is the assistant medical officer at the Jessop Hospital for Women and Mr. Simpson is the assistant surgeon at the Sheffield Royal Hospital. Dr. Barnes holds a British Medical Association Research Scholarship and is at present engaged in research in the Pathological Laboratory of the University.

THE ANNIVERSARY DINNER OF THE WEST LONDON MEDICO-CHIRURGICAL SOCIETY.—The twenty-sixth anniversary dinner of this society was held under the chairmanship of Mr. Richard Lake, the President, on Feb. 13th at the Wharncliffe Rooms, Hotel Great Central, Marylebone, London, and the occasion proved a great success, for which due praise was accorded to Dr. F. G. Crookshank, the senior secretary, and his colleague, Mr. A. Baldwin. "The Imperial Forces" was proposed by Mr. Herbert W. Chambers and was responded to by Colonel A. T. Sloggett, R.A.M.C. The chairman submitted the toast of the evening, "The West London Medico-Chirurgical Society." He was able to report that the finances were in a healthy condition and that the ordinary meetings of the society, of which nine were held during the session, had been well attended, the average number present at each meeting being 41. He was happy to state that there was an increase in the total membership, the number of members nearly reaching the total of 700. More books were being added to the library and there was a satisfactory arrangement for supplying members with an opportunity of seeing newly-published works. He concluded his speech with a graceful reference to the founder of the society, Mr. C. R. B. Keetley. Dr. A. J. R. Oxley proposed the toast of "The Kindred Societies and Guests," in the course of which he referred to the services rendered to the profession by Sir William S. Church, President of the Royal Society of Medicine. Sir

William Church, in replying, praised the results achieved by societies like the West London Medico-Chirurgical Society and pointed out that it was no part of the scheme of the Royal Society of Medicine to absorb societies such as theirs. Mr. Arbuthnot Lane, who also replied to this toast, concluded his remarks by proposing the health of the chairman, and that gentleman, in the course of acknowledging the toast, thanked the officers of the society for the help which they had accorded to him in his duties as President.

ROYAL LONDON OPHTHALMIC HOSPITAL (MOORFIELDS EYE HOSPITAL).—The annual general meeting of governors of this charity will be held on Tuesday, Feb. 25th, at 3 o'clock, at the Mansion House, by permission of the Lord Mayor, who has consented to preside. Lord Avebury, Sir Charles Wyndham, Dr. Hermann Adler, and Mr. H. Curtis Bennett have promised to speak in support of the hospital.

LONDON INTER-COLLEGIATE SCHOLARSHIPS BOARD.—It will be remembered that this board was constituted in 1904 with the approval of the governing bodies of University College, King's College, and the East London College, for the purpose of holding a combined annual examination for entrance scholarships and exhibitions tenable at those Colleges, and that the examination may be made use of by other bodies for the award of scholarships and exhibitions, subject to arrangement with the board. We are asked to state that the board will hold a combined examination for 20 scholarships and exhibitions in classics, languages, literature, history, science, and mathematics, tenable at University College, King's College, and the East London College, on May 12th and following days. No candidates will be admitted to the examination unless they have passed the London University matriculation or an equivalent examination and are under the age of 19 years on Oct. 1st, 1908. The total value of the scholarships offered exceeds £1700. Most of them are open to students of both sexes. Full particulars and forms of entry may be obtained from the secretary of the board (Mr. Alfred E. G. Attoe), University College, Gower-street, London, W.C.

THE BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.—The following have been elected by the council to be presidents of sections at the meeting of the association to be held in Dublin in September next under the general presidency of Mr. Francis Darwin, F.R.S.:—Section A (mathematical and physical science), Dr. W. N. Shaw, F.R.S., director of the Meteorological Office; Section B (chemistry), Professor F. S. Kipping, F.R.S., professor of chemistry in University College, Nottingham; Section C (geology), Professor J. Joly, F.R.S., professor of geology and mineralogy in the University of Dublin; Section D (zoology), Dr. S. F. Harmer, superintendent of the University Museum of Zoology, Cambridge; Section E (geography), Major E. H. Hills, C.M.G.; Section F (economic science and statistics), Lord Brassey; Section G (engineering), Mr. Dugald Clerk, M.Inst. C.E.; Section H (anthropology), Professor W. Ridgeway, professor of archæology in the University of Cambridge; Section I (physiology), Dr. John Scott Haldane, F.R.S., University reader in Physiology at Oxford; Section K (botany), Dr. F. F. Blackman, F.R.S., professor of botany in the University of Leeds; and Section L (educational science), Professor L. C. Miall, formerly professor of biology in the University of Leeds. Invitations to deliver evening discourses during the meeting of the Association at Dublin have been accepted by Professor H. H. Turner, F.R.S., Savilian professor of astronomy at Oxford, who will take as his subject "Halley's Comet"; and Professor W. M. Davis, of Harvard University, whose lecture will be entitled "The Lessons of the Colorado Cañon."

LONDON FEVER HOSPITAL.—The annual general meeting of the governors of this hospital was held at the Hotel Victoria, Northumberland-avenue, on Feb. 14th the chair being taken by the Right Hon. Lord Balfour of Burleigh, K.T., the president, who said he thought that he could fairly ask the meeting to express their appreciation in this regard because they had had a satisfactory year, 781 patients having been admitted during the year, which with 71 brought forward made a total of 852 patients treated for all diseases, this number being 250 more than the average of the last 20 years. Notwithstanding the increase of numbers the average rate of mortality in scarlet fever had been down so low as 1·50 lower than the previous years. Although during the rebuilding of the hospital they had had to refuse 35 patients, they were now able fully to meet the demands made upon them. 216 patients had been treated free in virtue of the subscriptions of private governors and managers of business houses, 476 had paid the ordinary fee of 3 guineas, 51 had paid 3 guineas a week in private rooms, and 38 had had their like fees remitted owing to their having established their inability to meet the charge. 72 of those who were charged 3 guineas had supplemented their fee not only by expressions of gratitude for the kindly care and attention which they had received but had sent sums totalling £227 in amounts varying from 1 guinea to £25. He appealed to the public for a continuation of their support which had hitherto been so generously given. He was afraid the completion of the new wing for measles would have to wait until further funds were forthcoming. The adoption of the report (which had been previously read by Dr. Sidney P. Phillips, the senior physician, and moved by Sir Shirley F. Murphy, medical officer of the London County Council) was carried unanimously. On the motion of Mr. Edward Norman, Lord Balfour was re-elected as president for the ensuing year, the vice-presidents, treasurer, honorary secretary, and members of the committee being elected. A vote of thanks (proposed by Mr. Mead) to Lord Balfour for presiding concluded the proceedings.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

The Children's Bill.

Mr. HERBERT SAMUEL, when he introduced the Children's Bill in the House of Commons, was prevented by the exigencies of time from explaining in detail many parts of this comprehensive measure. The text of the Bill is now available and it is possible to fill in with precision its various proposals. To recapitulate them would be a lengthy process, for the Bill contains 119 clauses, many of them of a complicated character. However, several points which were alluded to in this column last week may be further elaborated. For instance, it was mentioned that under the measure a penalty was proposed for exposing children to the risk of burning. The clause dealing with this matter lays down that if a person who has the custody or care of a child under the age of seven years, "allows that child to be in any room containing an open fire grate not sufficiently protected to guard against the risk of the child being burnt or scalded, and without taking reasonable precautions against that risk, and if by reason thereof the child is killed or suffers serious injury," he shall on summary conviction be liable to a fine not exceeding £10. This section does not extinguish the liability of such person to be proceeded against by indictment for any indictable offence. The penalty for causing the death of an infant under three years by overlying it is also a fine not exceeding £10. If the offender is proved to have been under the influence of drink the fine may amount to £25 and the court has the power to impose an alternative or an additional sentence of imprisonment for a term not exceeding three months if the offence is accompanied by aggravating circumstances.

Juvenile Smoking.

Six clauses in the Children's Bill deal with the Prohibition of Juvenile Smoking. An ascending scale of penalties for selling tobacco to children and young persons is set out. The first offence may be visited with a fine not exceeding £2 and the second with a fine not exceeding £5, but the third offence makes the offender liable to a penalty of £20. The words of the section have been carefully chosen and any person is liable to conviction if he "sells or gives to a person apparently under the age of 16 years any cigarette or cigarette papers, whether for his own use or not, or sells or gives to such a person any other tobacco which he knows or has reason to believe is for the use of that person." Constables, park-keepers, and persons authorised by special by-laws are to seize cigarettes and tobacco in the possession of "any person apparently under the age of sixteen" who is found smoking or about to smoke in any street or public place. A penalty is also proposed to be laid on the juvenile smoker himself. This clause, which deals directly with the evil, is of such importance that it may be quoted *in extenso*. It runs thus: "If a child or young person smokes in a street or public place, or purchases or has in his possession, whether for his own use or not, any cigarettes or cigarette papers, or purchases or has in his possession for his own use any other tobacco, he shall be liable on summary conviction in the case of a first offence to be reprimanded, and in the case of a second offence to a fine not exceeding 5*s.*, and in the case of a third or subsequent offence to a fine not exceeding 10*s.*" The phraseology of this section of the Bill is worthy of attention, as a distinction is drawn between the terms "cigarette" and "other tobacco." It seems to be the proposal of the Home Office that the actual possession of a cigarette, quite apart from the intention to smoke it, shall be an offence in a person under the age of

16. In the case of "other tobacco" mere possession does not constitute the proposed offence. It must be destined for the use of the juvenile delinquent. Exemption to young persons employed in the tobacco trade is given, in so far that they may continue their employment, but they are prohibited from smoking in the same way as if they were not employed in the business. A clause of the Bill deals with automatic machines for the sale of tobacco or cigarettes. It is proposed to endow courts of summary jurisdiction with powers to order the person on whose premises such a machine is kept to prevent it being extensively used by children and young persons for obtaining tobacco. Non-compliance with this order renders the person against whom it is made liable to a fine, which may be increased daily so long as his offence continues. However, he may either himself or by his agents make seizures of the cigarettes and tobacco obtained from the machine by young persons apparently under the age of 16.

The Children's Bill has been received with much satisfaction in all quarters of the House of Commons. Many of its provisions are generally conceded to be long overdue. In a measure of such length, however, there are almost bound to be clauses which in their drafting are unacceptable to some members. Mr. SAMUEL, who has been taking charge of the Bill, has approached the House in such a conciliatory spirit as to give the impression that the Government will exert itself to remove difficulties of this kind from the progress of the measure.

Infant Life Protection Committee.

The promised select committee of the House of Commons has been constituted to inquire into the advisability of extending the Infant Life Protection Act, 1897. The committee, which is a small one, has already set to work. Mr. JOHN ELLIS has been chosen as chairman. Steps have been taken to secure the attendance of witnesses competent to speak on the subject. The committee will meet again this week and it is understood that it will use the utmost despatch in completing the inquiry.

Poisons and Pharmacy Bill.

The Earl of CREWE has introduced into the House of Lords a Bill "to regulate the sale of certain poisonous substances, and to amend the Pharmacy Acts." The Bill was read a first time.

Nurses (Registration) Bill.

Mr. CLAUDE HAY has introduced into the House of Commons a Bill "to regulate the qualifications and registration of trained nurses." Sir ARTHUR BIGNOLD is associated with Mr. HAY in bringing in this Bill, which was read a first time.

Medical Practice by Companies.

Sir JOHN BATTY TUKE on Wednesday introduced into the House of Commons a Bill to prohibit joint-stock companies from acting as physicians, surgeons, or medical practitioners. The Bill as a matter of form was read a first time. Legislation dealing with this subject passed through the House of Lords last year, but owing to the congestion of business it failed to be considered by the House of Commons.

HOUSE OF COMMONS.

WEDNESDAY, FEB. 12TH.

Deaths from Starvation in London.

Mr. SUMMERBELL asked the President of the Local Government Board what were the number of deaths in 1907 in London upon which a coroner's jury returned a verdict of death from starvation or death accelerated by privation; how many of these took place in Whitechapel; if he had not yet received the Home Office returns as to these deaths, whether he would without delay obtain from the Whitechapel guardians or from the Poor-law inspector of the district the number of such deaths from starvation in Whitechapel in 1907; and whether he had conferred, or would confer, with the guardians of Whitechapel as to steps to prevent or diminish the number of such deaths.—Mr. BURNS replied in a written answer: I am not able to give the numbers for the year 1907, as the necessary particulars have not yet been obtained by the Home Office from the coroners. I have communicated with the clerk to the Whitechapel guardians as to the occurrence in that union in 1907 of cases of the kind referred to, and I am informed that the medical superintendent of the infirmary has caused a search to be made and can find only one such case—namely, that of George Wright who died on July 25th last and in respect of whom the verdict of the coroner's jury was that he died from pneumonia accelerated by neglect and want of food. I will inquire as to the circumstances of this case, but I am not at present aware of any need for action of the kind suggested in the concluding part of the question. In connexion with this matter the character of the district and the large number of persons of migratory habits attracted thereto by free shelters and common lodging-houses must be borne in mind.

Overcrowding in Scotland.

Mr. DUNDAS WHITE asked the President of the Board of Trade whether his attention had been called to the fact that in the recent report on the cost of living of the working classes in the principal industrial towns of the United Kingdom, the percentages of the total populations occupying overcrowded tenements—i.e., more than two persons per room—were given for the specified towns of England, Ireland, and Wales, but not for the specified towns of Scotland, it being stated that the figures for the Scottish towns were not available; whether he could state what were the corresponding figures for these Scottish towns; and whether he would consider the advisability of framing the forms for the next Census so as to obtain that information.—Mr. SINCLAIR the Secretary for Scotland, sent the following written reply:—My attention was directed some time ago to the fact that the figures referred to are not given in the Scottish Census Report, and under my instructions a return has been prepared for presentation to the House which will give full information on the subject for the whole of Scotland. The figures for the specified Scotch towns are as follows:—

Town.	Percentage of population living more than two in a room.
Aberdeen	38·1
Dundee	49·44
Edinburgh	32·94
Glasgow	54·7
Greenock	54·17
Kilmarnock	55·94
Leith	43·8
Paisley	58·76
Perth	28·26

My honourable friend will remember that the Board of Trade report draws attention to the fact that the tenement system of blocks of small flats is in Scotland the normal type of working-class dwelling, and that the rooms are generally much larger than those of an English cottage. The question of including these figures in the next Census Report will receive consideration.

THURSDAY, FEB. 13TH.

The Sale of Tuberculous Cattle in Scotland.

Mr. CATHCART WASON asked the Secretary for Scotland whether he was aware that in Scotland cattle in the last stages of tuberculosis were occasionally exposed for sale and food in the open market, with consequent risk of spread of the disease and danger to human life; and whether he proposed to take any steps by legislation or otherwise in order that persons submitting dying diseased cattle for sale might be prosecuted.—Mr. SINCLAIR replied: Section 43, 1 *a* of the Public Health (Scotland) Act, 1897, enables the officials of the local authority to seize animals that are intended for the food of man and are exposed for sale if they are diseased or unsound or unfit for the food of man, and the person to whom the animal belongs is liable to prosecution. The officials of the local authorities make use of this power and there does not seem need for fresh legislation in the direction suggested.

St. Andrew's Ambulance Classes.

Major ANSTRUTHER-GRAY asked the President of the Board of Trade whether instructions had been given to oblige Scotch candidates for master and mates first-aid certificates to qualify through St. Andrew's Ambulance instead of St. John's; whether he was aware that the yearly St. Andrew's course consisted of 144 lectures, while that of St. John's was only 52, and that the St. Andrew's Ambulance course was therefore more expensive in time and money than that of St. John's; whether the St. John's Ambulance classes, hitherto conducted on the East Coast of Scotland, had proved satisfactory; and, if so, why a system involving more time, trouble, and expense was enforced in Scotland and an easier system deemed sufficient for English candidates.—Mr. KEARLEY (Parliamentary Secretary to the Board of Trade) replied: Before granting a certificate for master or mate we require a man to have a knowledge of first-aid to the injured. This he can acquire through attending a course under either of the societies mentioned in the question. We have been in communication with the two societies, and as the St. John Ambulance Association informs us that it has centres at one or two Scottish ports only we have arranged with the St. Andrew's Society that courses should be available at all the chief ports in Scotland. If the suggestion in the question is that the Board imposes attendance at one society's course rather than the other the honourable and gallant Member is under a misapprehension.

Medical Inspection of School Children in Ireland.

Mr. JEREMIAH MACVEAGH asked the Chief Secretary to the Lord Lieutenant of Ireland whether his attention had been called to the resolution of the Irish Committee of the British Medical Association, urging the necessity of the medical inspection of school children in Ireland on the lines already adopted by legislation with regard to England; and whether, having regard to the fact that every argument for such inspection in England applied with even greater force to Ireland, he would consider whether steps could be taken to give effect to this recommendation.—Mr. BIRRELL answered: I have received a communication from the Irish Committee of the British Medical Association to the effect stated in the question. I have been in communication with the Commissioners of National Education upon the subject generally and the matter is to be further considered by the Commissioners at their meeting next week. I would therefore ask the honourable Member to defer the question for the present.

FRIDAY, FEB. 14TH.

Diphtheria in Wood-Pigeons.

In answer to Major ANSTRUTHER-GRAY,

Sir EDWARD STRACHEY (representing the Board of Agriculture) stated that the Board was aware of the prevalence of the disease called diphtheria in wood-pigeons in several counties in England. That department understood that scientific investigations were being made, the results of which would be carefully watched. They did not think that the matter could with advantage be made the subject of inquiry by a commission. As to whether the disease was of a nature to be dangerous to man, he would bring the subject before the Local Government Board, by which questions concerning the public health fell to be considered.

MONDAY, FEB. 17TH.

Malta Fever.

Mr. MALLET asked the Secretary of State for War whether he was aware of the public service rendered by a commission of the Royal Society, at the request of the War Office and the Admiralty, in discovering the cause of Malta fever, from which many hundreds annually of our soldiers and sailors on that island till recently suffered; and whether, in view of the importance of this discovery in the annals of preventive medicine, inasmuch as at the present moment the disease had been entirely stamped out, he would consider the desirability of giving the thanks of the Government to the Royal Society for this instance of the successful application of British scientific research.—

Mr. HALDANE replied: I am aware of the great service rendered by the commission in question. The commission's investigations and the adoption of preventive measures as the outcome of its recommendations have been followed by the practical disappearance of Malta fever from the garrison of the island. I think that the Royal Society is well aware how genuine is the appreciation of the Government. We owe much to the Royal Society's Commission for the successful issue of this remarkable investigation and for the excellent results which have followed. These results illustrate the enormous importance of bringing science into our business of government.

The Belfast Health Commission.

Mr. DEVLIN asked the Chief Secretary to the Lord Lieutenant of Ireland whether any report had yet been received from the Health Commission which recently sat in Belfast; or, if not, when was the report likely to be published.—The Attorney-General for Ireland (Mr. CHERRY) replied in the absence of Mr. BIRRELL: The report has not yet been received, but I am informed by the Chairman of the Commission that it may be expected early next month.

Milk-blended Butter.

Mr. O'SHAUGHNESSY asked the honourable Member for South Somerset, as representing the President of the Board of Agriculture, whether he could say under what name was milk-blended butter sold with the approval of the Board of Agriculture, in accordance with the Butter and Margarine Act, 1907, when it contains more than 16 per cent. and under 24 per cent. of water; and whether, under the Act, there was any change in the description of margarine when offered for sale to the public.—Sir EDWARD STRACHEY replied: 19 names have up to the present time been approved by the Board for milk-blended butter. The law as to the manner in which margarine is to be described was amended by Section 8 of this Act, to which the honourable Member refers.

Milk Legislation.

Mr. COURTHOPE asked the President of the Local Government Board whether, in view of the intention of the Government to introduce general legislation on the subject of the milk-supply, he would move instructions to the committees on all private Bills containing milk clauses that such clauses be struck out.—Mr. BURNS wrote in reply: It does not seem to me that the course proposed could well be adopted. I think that the best plan will be that the clauses should for the present be retained on the understanding that they will be subject to reconsideration at a later stage in the event of a public Bill being passed.

Tuberculosis in Frozen Meat.

Mr. COURTHOPE asked the President of the Local Government Board whether he was aware that frozen beef from the Argentine had recently been seized in Hull affected with glandular tuberculosis, although accompanied by the official label of the Argentine Government certifying that the meat was sound; and what steps he proposed to take to safeguard the health of the community from such occurrences in future.—Mr. BURNS furnished the following written reply: The answer to the first part of the question is in the affirmative. Regulations under the Public Health (Regulations as to Food) Act, 1907, are in preparation and will, I hope, soon be issued to confer additional powers on port sanitary authorities and to enable them to deal suitably with any diseased meat which may be detected on arrival in this country.

TUESDAY, FEB. 18TH.

Horse Meat and Sausages.

Mr. RICHARDSON asked the President of the Local Government Board whether he had any official information as to the number of worn-out horses sent from Nottingham and Worksop to the continent, and as to whether these animals were there converted into sausages and then imported into this country for consumption as human food, if so, could he say to what port on the continent they were exported, and what proportion of this sausage was consumed in this country.—Mr. BURNS answered: I have no official information as to the number of worn-out horses sent from Nottingham and Worksop to the continent. I have not met with any definite evidence pointing to the importation into this country of sausages prepared from horses, though it is sometimes alleged that sausage meat imported in bulk contains horse meat. I have the subject of the importation of sausage meat under consideration in connexion with the regulations which I am preparing under the Public Health (Regulations as to Food) Act of last session.

Soldiers and Tuberculosis.

Mr. SUMMERBELL asked the Secretary of State for War what action he proposed to take in regard to soldiers suffering from tuberculosis in view of the findings of the Select Committee appointed to go into the matter.—Mr. HALDANE replied: The recommendations of the Select Committee have been recently considered by the Government as a whole. The decision is that, however desirable the special provision recommended by the committee in the case of soldiers discharged from the army because of tuberculosis, it is impossible to justify the assumption of this new kind of obligation by the State unless it is extended to other services as well as the army, and possibly more widely still. The question thus raised becomes one of great gravity and cannot be decided by any single department.

The London County Council and Inebriate Institutions.

In answer to Mr. CHARLES ROBERTS, Mr. GLADSTONE, the Home Secretary, wrote that he had received with much regret a letter from the London County Council stating that the Council did not see its way to renew its contracts with the national institutions for the care and reformation of inebriate persons. The accounts of seven out of the eight institutions of this kind in full working order during 1906 showed a maintenance cost varying from 10*s.* 4*d.* to 14*s.* per inmate per week, but the eighth, "Farmfield," managed by the London County Council, was not conducted at less than a weekly rate of 18*s.* 6*d.* per head. It was felt that 14*s.* per week should be considered the total amount required for maintenance and that the managers of reformatories should be induced to bring down their expenses to that sum per head. In furtherance of the view that the segregation of inebriates relieved imperial and local funds about equally, it was decided that the Government contribution should be reduced from 10*s.* 6*d.* to 7*s.* to correspond with the 7*s.* provided by local authorities. This reduction had been accepted as reasonable by the managers of reformatories except in the case of the London County Council. In May last the council decided to withdraw its contract with the national institutions and restrict its work under the Inebriates Act to that carried on at Farmfield for 100 cases. The right honourable gentleman added in conclusion that a few vacancies at Farmfield would probably be available from time to time, but these would be so few as practically to render the Act useless so far as London was concerned, and the step taken by the council would, involve reversion to the discredited system of short and repeated terms of imprisonment as the only means of dealing with female inebriates but no power existed by which the council could be compelled to reverse its decision or make other adequate provision for the needs of cases committed from within its administrative area.

WEDNESDAY, FEB. 19TH.

The Royal College of Surgeons of England.

Sir WILLIAM COLLINS asked the Prime Minister whether he would state what action had been taken by the Lord President of the Council in regard to the memorial which was presented to the Prime Minister in the session before last on behalf of Members of the Royal College of Surgeons of England, asking him to take such steps as might secure to Members some voice in the management of the College and its property; and what reply had been received from the Council of the College to representations made to them by the Lord President.—Sir HENRY CAMPBELL-BANNERMAN wrote in reply: It is a matter of common knowledge that in reply to the different deputations which he received, the Lord President expressed the general sympathy of the Government with the objects of the memorial; but the Council of the Royal College appear to maintain the rigour of their attitude on the subject.

BOOKS, ETC., RECEIVED.

APPLETON, SIDNEY, 25, Bedford-street, Covent Garden, London, W.C.

Rummage. By H. C. P. Pattin. Price 2*s.* net.

A Text Book of Treatment (alphabetically arranged). By William Calwell, M.A., M.D., Physician, Royal Victoria Hospital, Belfast; John Campbell, M.A., M.D., F.R.C.S. Eng., Surgeon, Samaritan Hospital for Women, Belfast; and Robert Campbell, B.A., M.B., F.R.C.S. Eng., Assistant Surgeon, Royal Victoria Hospital, Belfast. Edited by R. J. Ferguson, M.D., F.R.C.S. Eng., Gynæcological Registrar, Kensington General Hospital, London. Part I., Obstetrics and Gynecology. By John Campbell, M.A., M.D., F.R.C.S. Eng. Sold separately, price 10*s.* net.

ASSOCIATION OF AMERICAN PHYSICIANS (Recorder: Dr. SOLOMON SOLIS COHEN, 1525, Walnut-street), Philadelphia.

Transactions of the Association of American Physicians. Twenty-second Session, held at Washington, D.C., May 7th, 8th, and 9th, 1907. Volume XXII. Price not stated.

BARTH, JOHANN AMBROSIUS, Leipzig.

Studien und Mikrophotogramme zur Kenntnis der Pathogenen Protozoen. Herausgegeben von Th. von Wasielewski, Chefarzt und Leiter der parasitologischen Abteilung am Institut für Krebsforschung, Privatdozent für Hygiene an der Universität Heidelberg, Stabsarzt a.D. Zweites Heft (Aus den Hygienischen Instituten der Universität Berlin und dem Institut für Krebsforschung zu Heidelberg). Untersuchungen über Blutschmarotzer. Price M. 12.

DORNAN, WILLIAM J., Philadelphia. (J. RIDDLE GOFFE, M.D., Secretary, No. 616, Madison-avenue, New York.)

Transactions of the American Gynecological Society. Volume 32. For the Year 1907. Price not stated.

FISCHER, GUSTAV, Jena.

Die Pathologie der Nebennieren und der Morbus Addisonii. Klinische und Anatomische Untersuchungen. Von Dr. Alexander Bittorf, Privatdozent und Assistent der Medizinischen Klinik zu Breslau. Price M.4.

FROWDE, HENRY, AND HODDER AND STOUGHTON, 20, Warwick-square London, E.C.

The Oxford Medical Publications. A System of Medicine. By Eminent Authorities in Great Britain, the United States, and the Continent. Edited by William Osler, M.D., F.R.S., Regius Professor of Medicine in Oxford University, England, assisted by Thomas McCrae, M.D., F.R.C.P. Lond., Associate Professor of Medicine and Clinical Therapeutics in the Johns Hopkins University, Baltimore. Volume III. Infectious Diseases (*continued*)—Diseases of the Respiratory Tract. Price, to subscribers, 24*s.* net per volume; to non-subscribers, 30*s.* net per volume.

HARPER AND BROTHERS, 45, Albemarle-street, London, W., and New York.

Hypnotic Therapeutics in Theory and Practice. With Numerous Illustrations of Treatment by Suggestion. By John Duncan Quackenbos, A.M., M.D., Author of "Hypnotism in Mental and Moral Culture," "Practical Physics," &c. Price 7*s.* 6*d.* net.

HIRSCHWALD, AUGUST, Unter den Linden, 68, Berlin, N.W.

Der Gang des Menschen und die Fussgeschwulst. Von Stabsarzt beim Garde-Fussartillerie-Regiment. Price M.5.

Atlas der Gynäkologischen Cystoskopie. Von Prof. Dr. W. Stoeckel, Direktor der Universitäts-Frauenklinik in Marburg a. L. Price M.12.

IMPRIMERIE OSMANIÉ, Constantinople.

Annales Médicales et Bulletin de Statistique de l'Hôpital d'Enfants Hamidié. Publié au Jour Anniversaire de l'Avènement au Trône de S. M. I. le Sultan, sous la Direction du Médecin en Chef en Collaboration avec les Medecins de l'Hôpital. VIIIème Année. (Printed mainly in Turkish.) Price not stated.

LONGMANS, GREEN, AND CO., 39, Paternoster-row, London, E.C.; and New York, Bombay, and Calcutta.

Thermochemistry. By Julius Thomsen, Emeritus Professor of

Chemistry in the University of Copenhagen. Translated from the Danish by Katharine A. Burke, B Sc. Lond., Assistant in the Department of Chemistry, University College, London. Price 9s.

MITTLER, ERNST SIEGFRIED UND SOHN, Kochstrasse, 68-71, Berlin.

Medizinal-Berichte über die Deutschen Schutzgebiete-Deutsch-Ostafrika, Kamerun, Togo, Deutsch-Südwestafrika, Neu-Guinea, Karolinen, Marshall-Inseln und Samoa, für das Jahr 1905-06. Herausgegeben vom Reichskolonialamt. Price M.7.50.

ORANGE JUDD COMPANY, New York. (KEGAN PAUL, TRENCH, TRÜBNER AND CO., LIMITED, London.)

Practical Dairy Bacteriology. By H. W. Conn, Ph.D., Professor of Biology of Wesleyan University and Bacteriologist of the State Board of Health of Connecticut. Price 6s. 6d.

ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH, Sixty-sixth-street and Avenue A, New York, U.S.A.

Studies from the Rockefeller Institute for Medical Research. Reprints. Vol. VII., 1907. Price not stated.

ROUSSET, JULES, 1, Rue Casimir-Delavigne, et 12, Rue Monsieur-le-Prince, Paris.

Formulaire Synthétique de Médecine. Par le Dr. L. Pron. Price not stated.

ROUTLEDGE, GEORGE, AND SONS, LIMITED, London. (DUTTON, E. P., AND CO., New York.)

The Case for the Goat. With the Practical Experience of Twenty-four Experts. By "Homes Counties." Price 3s. 6d.

RUDEVAL, F. R. DE, 4, Rue Antoine-Dubois, Paris.

Les Crises Vasculaires. Par le Professeur Pal, Médecin des Hôpitaux de Vienne. Traduit de l'Allemand par le Docteur G. Babion, Médecin Major de 2e Classe. Price not stated.

W. B. SAUNDERS COMPANY, Philadelphia and London.

Hospital Training-School Methods and the Head Nurse. By Charlotte A. Aikens, late Director of Sibley Memorial Hospital, Washington, D.C., late Superintendent of Iowa Methodist Hospital, Des Moines, and of Columbia Hospital, Pittsburg; Associate Editor of the National Hospital Record. Price 6s. 6d. net.

A Reference Handbook of Obstetric Nursing. By W. Reynolds Wilson, M.D., Visiting Physician to the Philadelphia Lying-in Charity; Member of the American Pediatric Society. Price 6s. net.

A Text-book of Diseases of the Nose and Throat. By D. Braden Kyle, A.M., M.D., Professor of Laryngology and Rhinology, Jefferson Medical College; Consulting Laryngologist, Rhinologist, and Otologist, St. Agnes' Hospital; Fellow of the American Laryngological Association, etc. Fourth edition, thoroughly revised and enlarged. Price, cloth, 18s. net.

Treatise on Diseases of the Skin. For the Use of Advanced Students and Practitioners. By Henry W. Stelwagon, M.D., Ph.D., Professor of Dermatology in the Jefferson Medical College, Philadelphia. Fifth edition, thoroughly revised. Price 25s. net.

A Text-book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., Professor of Medicine and Clinical Medicine at the Medico-Chirurgical College; Physician to the Medico-Chirurgical Hospital, Philadelphia. Eighth edition, thoroughly revised. Price 24s. net.

Diseases of Children. For Nurses. By Robert S. McCombs, M.D., Assistant Physician to the Dispensary and Instructor of Nurses at the Children's Hospital of Philadelphia; Assistant Physician to the Medical Dispensary of the Hospital of the University of Pennsylvania. Price 10s. net.

Principles and Practice of Modern Otology. By John F. Barnhill, M.D., Professor of Otology, Laryngology, and Rhinology, Indiana University School of Medicine; Otologist and Laryngologist to Deaconess and State College Hospitals, etc., and Ernest de Wolfe Wales, B.S., M.D., Associate Professor of Otology, Laryngology, and Rhinology, Indiana University School of Medicine. Price 24s. net.

SPRINGER, JULIUS, Monbijouplatz, 3, Berlin.

Atlas der Aetiologischen und Experimentellen Syphilisforschung. Mit Unterstützung der Deutschen Dermatologischen Gesellschaft. Herausgegeben von Erich Hoffmann. Price M.48.

STEINHEIL, G., 2, Rue Casimir-Delavigne, Paris.

Traité Pratique de Thérapeutique Infantile Médico-Chirurgicale. Par les Docteurs Paul Le Gendre, Médecin de l'Hôpital Laribosière et Aug. Broca, Professeur Agrégé à la Faculté Chirurgien de l'Hôpital des Enfants-Malades. Deuxième édition, complètement refondue. Price Fr.15.

SWAN SONNENSCHEIN AND CO., LIMITED, London. (THE MACMILLAN CO., New York.)

Attention. By W. B. Pillsbury, Junior Professor of Philosophy, Director of the Psychological Laboratory, University of Michigan. Price 10s. 6d. net.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ANDREW, WILLIAM, M.B., C.M. Edin., has been re-appointed Medical Officer for the No. 2 District by the Launceston (Cornwall) Board of Guardians.

ANNAN, JOHN L., M.B., Ch.B. Edin., has been appointed Demonstrator in Anatomy at the University of Sheffield.

BARNES, A. E., M.B. Lond., M.R.C.P., has been appointed Clinical Tutor in Medicine at the University of Sheffield.

CARTER, W. H. ST. LEGER, L.R.C.P. & S. Edin., has been appointed to the Honorary Medical Staff of the Liskeard Hospital, Cornwall.

CURTIS, HENRY, B.S., M.D. Lond., F.R.C.S. Eng., has been appointed Assistant Surgeon at the Branch Seamen's Hospital, Royal Albert Dock, E.

CURTIS, W., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed to the Honorary Medical Staff of the Liskeard Hospital, Cornwall.

HAMMOND, W., M.R.C.S., L.R.C.P. Edin., L.S.A., has been appointed to the Honorary Medical Staff of the Liskeard Hospital, Cornwall.

HINE, ARTHUR ERNEST BARRATT, L.R.C.P., M.R.C.S., D.P.H. Lond., has been appointed District Medical Officer by the Devonport Board of Guardians.

HINGSTON, R., L.R.C.P., M.R.C.S., L.S.A., has been appointed to the Honorary Medical Staff of the Liskeard Hospital, Cornwall.

JOHNSON, ALFRED E., M.B., Ch.B. Vict., F.R.C.S. Eng., has been elected Resident Medical Officer at the Middlesex Hospital.

LEITCH, ARCHIBALD, M.B., Ch.B. Glasg., has been appointed Investigator into Cancer in connexion with the Dundee Royal Infirmary.

NETTLE, W., M.R.C.S., L.S.A., has been appointed to the Honorary Medical Staff of the Liskeard Hospital, Cornwall.

PEARSE, E. M., L.R.C.P., M.R.C.S., has been appointed to the Honorary Medical Staff of the Liskeard Hospital, Cornwall.

PHILLIPS, M. H., M.B. Lond., F.R.C.S., has been appointed Clinical Tutor in Obstetrics and Gynæcology at the University of Sheffield.

SHAW, JOHN EDWARD, M.B., C.M. Edin., has been appointed Honorary Consulting Physician to the Bristol Royal Infirmary.

SIMPSON, GRAHAM, F.R.C.S. Eng., has been appointed Clinical Tutor in Surgery at the University of Sheffield.

SMITH, E. ARCHIBALD, M.B., F.R.C.S. Eng., has been appointed Honorary Surgeon to the Western General Dispensary, Marylebone-road, London, N.W.

STEWART, T. GRAINGER, M.B. Edin., M.R.C.P. Lond., has been appointed Assistant Physician to the National Hospital for the Paralysed and Epileptic, Queen-square, Bloomsbury.

TURTLE, GODFREY DE BEC, M.D., B.S. Durh., M.R.C.P. Lond., has been appointed Physician to the Public Dispensary, Drury-lane, W.C.

WETHERALL, PRITZLER SIM BATTEN, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Weymouth Workhouse.

WHITE, CLIFFORD, M.D., B.S., M.R.C.P. Lond., has been appointed Surgical Registrar to the Samaritan Hospital for Women.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BANGOR, CARNARVONSHIRE AND ANGLESEY INFIRMARY.—House Surgeon. Salary £80 per annum, increasing to £100, with board, washing, and lodging.

BEDFORDSHIRE COUNTY COUNCIL.—Assistant County Medical Officer of Health. Salary £250 per annum, rising to £300, with expenses.

BIRMINGHAM AND MIDLAND HOSPITAL FOR SKIN AND URINARY DISEASES, John Bright-street, Birmingham.—Clinical Assistant. Salary at rate of 52 guineas per annum.

BOLINGBROKE HOSPITAL Wandsworth Common, S.W.—House Surgeon. Salary £75 per annum.

BOLTON INFIRMARY AND DISPENSARY.—Senior and Junior House Surgeons. Salary for Senior £130 and for Junior £100 per annum, with apartments, board, and attendance.

BRADFORD EDUCATION COMMITTEE.—Two Assistants (one male, one female) to the Medical Superintendent. Salary £350 per annum each.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board, residence, and laundry.

BRITISH LYING-IN HOSPITAL.—Physician to Out-patients.

CARDIFF COUNTY BOROUGH ASYLUM.—Senior Assistant Medical Officer, unmarried. Salary, &c., £200, increasing to £250, with quarters and all found. Also Junior Assistant Medical Officer. Salary, &c., £150, increasing to £180, with quarters and all found.

CARDIFF EDUCATION COMMITTEE.—Two Assistant Medical Officers. Salaries in each case £220 per annum, rising by £10 yearly to £250 per annum.

CARDIFF INFIRMARY (GENERAL HOSPITAL).—House Physician for six months. Salary £30, with board, residence, and laundry.

COVENTRY AND WARWICKSHIRE HOSPITAL.—Junior House Surgeon for six months. Salary £60 per annum, with rooms, board, washing, and attendance.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon. Salary £60 per annum, with residence, board, and washing.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Surgeon for six months. Salary £25, with board, residence, laundry, &c. Also Medical Officer to the Casualty Department for six months, renewable. Salary at rate of £100 per annum, with luncheon and tea.

EASTERN DISPENSARY, Leman-street, Whitechapel, E.—Resident Medical Officer. Salary £120 per annum, with residence, coals, and attendance. Also Physician Accoucheur

ENFIELD EDUCATION COMMITTEE.—School Medical Officer (female). Salary £300 per annum.

HAMPSTEAD GENERAL HOSPITAL, WITH WHICH IS AMALGAMATED THE NORTH-WEST LONDON HOSPITAL.—Two Physicians and one Surgeon.

INGHAM INFIRMARY AND SOUTH SHIELDS AND WESTOE DISPENSARY.—Junior House Surgeon. Salary £90 per annum, with residence, board, and washing.

IPSWICH EDUCATION COMMITTEE.—Assistant School Medical Officer. Salary at rate of £150 per annum.

LANARK COUNTY COUNCIL.—Bacteriologist. Salary £250 per annum.

LIVERPOOL, DAVID LEWIS NORTHERN HOSPITAL.—House Surgeon, also House Physician. Salary £60 each per annum, with residence and maintenance.

MANCHESTER CHILDREN'S HOSPITAL, Pendlebury.—Junior Resident Medical Officer, unmarried. Salary at rate of £80 per annum, with board and lodging.

MANCHESTER ROYAL INFIRMARY AND DISPENSARY.—Honorary Assistant Gynæcological Surgeon.

METROPOLITAN ASYLUMS BOARD.—Assistant Bacteriologist. Salary £300, rising to £350, per annum.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Casualty Officer. Salary at rate of £150 per annum.

MIDDLESBROUGH EDUCATION COMMITTEE.—Assistant to the Medical Inspector of School Children. Salary £300 per annum.

MIDDLESEX HOSPITAL, W.—Registrar to the Cancer Wards, also Scholar in the Cancer Research Laboratories. Salary of the Registrar £40 per annum and of the Research Scholar £60 per annum.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Albany Memorial, Queen-square, Bloomsbury.—Assistant Pathologist. Salary 50 guineas per annum. Also Resident Medical Officer. Salary £100 per annum, with board and apartments.

NEWPORT (MON.) EDUCATION COMMITTEE.—Assistant Medical Officer of Health and Medical Inspector of Schools. Salary £225, rising to £275.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Assistant House Surgeon for six months. Salary £20, with apartments, board, and laundry.

NOTTINGHAMSHIRE EDUCATION COMMITTEE.—School Medical Officer. Salary £300 per annum, and travelling expenses.

PLYMOUTH EDUCATION AUTHORITY.—School Medical Officer. Salary £250 per annum.

POPLAR HOSPITAL FOR ACCIDENTS, Poplar, E.—Assistant House Surgeon. Salary at rate of £80 per annum, with board and residence.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Resident Medical Officer. Salary at rate of £60 per annum, with board, residence, and washing.

ROYAL BERKSHIRE HOSPITAL.—House Physician. Salary £80 per annum, with board, lodging, and washing. Also Assistant House Surgeon. Salary £60 per annum, with board, lodging, and washing.

ROYAL NAVY, MEDICAL DEPARTMENT.—Examination for not less than 15 Commissions.

SALISBURY INFIRMARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with apartments, board, and lodging.

SUNDERLAND INFIRMARY.—House Physician. Salary £80 per annum, with board, residence, and washing.

THROAT HOSPITAL, Golden-square, W.—House Surgeon. Salary £75 per annum, with residence, board, and laundry.

WEST LONDON HOSPITAL, Hammersmith-road, W.—Two House Physicians and three House Surgeons for six months. Board, lodging, and laundry allowance provided.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Junior House Surgeon. Salary at rate of £80 per annum, with board, lodging, and washing.

WORCESTERSHIRE, BARNSLEY HALL ASYLUM, Bromsgrove.—Second Assistant Medical Officer. Salary £150 per annum, with quarters, board, washing, and attendance.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Foyers, in the county of Inverness; at St. Germans, in the county of Cornwall; at Dulais Valley, in the county of Glamorgan; at Llandrindod Wells, in the county of Radnor; at Newcastle, in the county of Limerick; and at Ovoca, in the county of Wicklow.

Births, Marriages, and Deaths.

BIRTHS.

ARCHER.—On Feb. 15th, at Hamlet Court-road, Westcliff, the wife of Archibald Archer, L.D.S. Eng., of a son.

DUNNE.—On Feb. 11th, at 20, Trent Boulevard, West Bridgford, Nottingham, the wife of Arthur Briggs Dunne, M.B., B.C. Cantab., D.P.H. Lond., of a daughter.

HEDLEY.—On Feb. 13th, at 56, Hans-place, S.W., to Dr. and Mrs. Edward Hedley—a daughter.

WAKEFIELD.—On Feb. 10th, at Norwood-hill, Charlwood, near Horley, Surrey, the wife of Christopher Frank Wakefield, M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

HEATH—ADDISON.—On Feb. 14th, at St. Paul's Church, Avenue-road, Regent's Park, Philip Maynard Heath, M.S., F.R.C.S., to Dorothy Mary Rosamond, only daughter of Joseph Addison.

JENKINS—LOVERIDGE.—On Feb. 16th, at the Cathedral, Shanghai, Herbert Stanley Jenkins, M.D. Lond., F.R.C.S. Eng., of Sianfu, Shensi, North China, and Clifton, Bristol, England, to M. L. (Daisy), eldest daughter of Thomas Loveridge, Llandaff, Cardiff.

DEATH.

HARVEY.—On Feb. 12th, at Westbury-on-Trym, Bristol, Alice Mary, wife of Alfred Harvey, M.B., and daughter of the late John Bassett, M.D., of Birmingham.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE UNIVERSITY OF LIVERPOOL IN ITS RELATION TO PUBLIC HEALTH.

A CORRESPONDENT writes: "There is no University in Britain so deeply indebted to the local city council as that of Liverpool. The University was almost called into existence in 1880 by the municipal council which presented a site and buildings for the new institution worth £30,000; its annual grant in aid has risen to the sum of £11,700; the Lancashire, Cheshire, Bootle, and Birkenhead councils also contribute a total yearly sum of £2300. Whenever additional funds have been required, and the occasions are numerous, the city council has always lent moral support; indeed, it is not too much to say that the relation between council and University is a filial one. But the obligations are not all on one side; the University undertakes a great deal of the work that a higher conception of civic duty has compelled modern municipalities to assume. Liverpool University boasts that in every department a considerable body of students continue the work of original research under the guidance of the professors. The work of the School of Tropical Medicine is widely known. But, in addition, the useful work of analysing daily and systematically the water of the city is performed in the laboratories of the University; considerable quantities of food and beverages are sent to the authorities for bacteriological analysis and report on adulteration. Diseases of animals are studied and reported on. It is not very long since a mysterious disease broke out in a factory. Its cause could not be ascertained until the botanical department of the University discovered that a poisonous wood had been used in the equipment of the factory. Analyses of this kind could not be thoroughly and scientifically performed without great expense to the local authority but for the coöperation of the University. All the county and city councils named have a right to the services enumerated. The University also offers direct and important service to the whole of the local medical profession by means of its bacteriological and pathological departments."

"LOCAL HOSPITALS" IN AMERICA.

THE *Nursing News* of Feb. 15th contains an interesting article by Miss A. L. Pringle, formerly matron of the Edinburgh Royal Infirmary, on the subject of "Local Hospitals" in America. These useful institutions are indispensable to a country where so many people make their homes in lodging- and boarding-houses with no conveniences for sick nursing. They do not find a match in our cottage hospitals, or in our nursing homes, but are something more on the lines of small and well-equipped general hospitals, in which the patients pay for their support according to their means and are attended by the practitioners of the neighbourhood, an arrangement which is alike beneficial to patients and medical men. When there is any deficit in the funds it is made up by public appeal and the benevolence of individuals, and the ladies in the various districts interest themselves practically in the hospital's welfare. The appointments and manner of serving meals approximate to that to which the patients are accustomed at home, and the patients altogether have more latitude than do the inmates of our hospitals for the sick poor. Miss Pringle draws a delightful picture of one of these hospitals in Massachusetts which "stands just outside the town on a shelf of high ground, the wooded summit of which rises behind it uncultivated, unfenced, a foot-hill of the beautiful range inclosing the valley of a famous river. In front are flowers and a lawn, but otherwise all round is rough woodland, and in favourable weather the patients lie out there in piazzas or in tent wards, enjoying the trees, the birds, and the sky as freely as if they were in the back-woods."

THE HOUR OF BIRTH.

Dr. F. W. Lynch of Chicago has lately (December, 1907) published in *Surgery, Gynæcology, and Obstetrics* an analysis of the hour of birth in 1508 full-term spontaneous labours at Johns Hopkins Hospital. He concludes that the theory that most births occur during the night is erroneous and that parturition is distributed fairly evenly throughout the 24 hours, though the variations between 7 P.M. and 7 A.M. showed 4 per cent. more births than in the other 12 hours, in which the variation was less than 0·5 per cent.

THE REMOVAL OF TATTOO MARKS.

IN a recent number of *La Nature* an account is given of Dr. Everard's method of removing tattoo marks. A blister is raised over the whole of the affected area by means of a plaster. The epidermis is then removed, a solution of cocaine is applied, and the tattoo marks are effaced by a thermo-cautery. The cautery is passed over the entire area until it assumes a brown appearance, like that of wood in pyro-engraving. In this way all traces of indigo or carmine disappear. The parts are then dressed with an ointment containing 10 per cent. of salicylic acid. On the third or fourth day a scab may be removed and the pigmentation will have disappeared. An evident scar

remains, resembling that produced by a blister or a burn. After the removal of the scab the scar tissue should be rendered as soft as possible by using a moist application—e.g., a compress moistened with a solution of picric acid, and subsequently by dusting the surface with powdered talc. It is stated that only a faint trace of the original design will then remain. Dr. Everard recommends the preliminary production of a blister in order to prevent the formation of a black, adherent scab.

TEST FOR A MEAT DIET.

Mr. V. Arnold, in the *Apothcker Zeitung*, describes a test for indicating whether a patient has indulged in meat contrary to the orders of his physician. It is based on the well-known fact that sodium nitroprusside produces a violet colouration with even minute traces of an alkaline sulphide. In performing the test 10 or 20 cubic centimetres of the urine are treated first with one drop of a 4 per cent. aqueous solution of sodium nitroprusside and then with 5 to 10 cubic centimetres of a 5 per cent. solution of sodium or potassium hydrate. If the patient has partaken of meat or broth a violet colour is immediately produced, changing quickly through a reddish-purple or a reddish-brown tint to yellow. It is recommended that the urine be first decolourised by filtration through animal charcoal.

G. P. N.—We fear that our correspondent's humorous aphorisms might be taken by some of our readers as reflections upon themselves. We sympathise with him in the troubles which he has had.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (24th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (3 P.M.), St. Mark's (2.30 P.M.).

TUESDAY (25th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.), Tottenham (2.30 P.M.).

WEDNESDAY (26th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.), Tottenham (Ophthalmic, 2.30 P.M.).

THURSDAY (27th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.), Tottenham (Gynæcological, 2.30 P.M.)

FRIDAY (28th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), Tottenham (2 30 P.M.), St. Peter's (2 P.M.).

SATURDAY (29th).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 A.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 20, Hanover-square, W.

MONDAY.—(*Odontological Section*). 8 P.M., Mr. J. E. Spiller: Dental Uses of Paraform. Mr. W. J. Law: Some Investigations of the Nerves in the Teeth of Mammalia (illustrated by epidiascope and microscopes). Adjourned Discussion on Mr. J. F. Colyer's paper on the Treatment of Children from a Dental Aspect.

TUESDAY.—(*Medical Section*). 5 30 P.M., Dr. West: Acute Suffocative Catarrh. Dr. S. Phillips: A Case of Acute Ulcerative Colitis with some Unusual Symptoms. (*Therapeutical and Pharmacological Section*). (Apothecaries' Hall, Blackfriars, E.C.)—4 P.M., Exhibition of Instruments, &c., and Demonstrations. 4.30 P.M., Conversazione. Dr. H. Campbell: The Therapeutics of Diet.

FRIDAY.—(*Epidemiological Section*). 8.30 P.M., Mr. R. C. Punnett: Mendelism in Relation to Disease. (*Electro-Therapeutical Section.*)—8.30 P.M., Dr. L. Jones: The Principles and Practice of Ionic Medication.

MEDICAL SOCIETY OF LONDON, 11, Chandos-street, Cavendish-square, W.

MONDAY.—8.30 P.M., Dr. W. H. Willcox: Importance and Significance of the Chemical Examination of the Gastric Contents after a Test Meal. Dr. C. Bolton: The Experimental Production of Gastric Ulceration by Injection of Gastrotoxin.

CHILD STUDY SOCIETY LONDON, Parkes Museum, Margaret-street, W.

THURSDAY.—8 P.M., Sir Edward Brabrook: Introductory Address.

ROYAL SOCIETY OF ARTS, John-street, Adelphi, W.C.

FRIDAY.—8 P.M., Dr. J. S. Haldane: The Removal of Dust and Fumes in Factories. (Shaw Lecture on Industrial Hygiene.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

MONDAY, WEDNESDAY, AND FRIDAY.—5 P.M., Prof. D. Armour: The Surgery of the Spinal Cord and its Membranes. (Hunterian Lectures.)

MEDICAL GRADUATES' COLLEGE AND POLYCLINIC, 22, Chenies-street, W.C.

MONDAY.—4 P.M., Dr. J. M. H. MacLeod: Clinique (Skin). 5.15 P.M., Lecture:—Mr. B. G. A. Moynihan (Leeds): The Differential Diagnosis of Obstructive Jaundice.
TUESDAY.—4 P.M., Dr. L. Williams: Clinique (Medical). 5.15 P.M., Lecture: Dr. L. Smith: Syphilis in General Medicine.
WEDNESDAY.—4 P.M., Mr. L. Mummery: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. L. Paton: The Retina in Albuminuria.
THURSDAY.—4 P.M., Mr. Rutchinson: Clinique (Surgical). 5.15 P.M., Lecture:—Dr. F. Taylor: Leukæmia.
FRIDAY.—4 P.M., Dr. J. Horne: Clinique (Throat).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith, road, W.

MONDAY.—12 noon, Lecture:—Dr. Low: Pathological. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M., Operations. 5 P.M., Lecture:—Dr. K. Scott: Some Acute Inflammations of the Eye.
TUESDAY.—10 A.M., Dr. Moullin: Gynæcological Operations. 12 noon: Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. Low: Plague.
WEDNESDAY.—10 A.M., Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Scott: Diseases of the Eye. 2.30 P.M., Operations. 5 P.M., Lecture:—Dr. Beddard: Practical Medicine.
THURSDAY.—12 noon, Lecture:—Dr. Pritchard: Practical Medicine. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Dunn: Diseases of the Eye. 2.30 P.M., Operations. 5 P.M., Lecture:—Mr. Keetley: Clinical.
FRIDAY.—10 A.M., Dr. M. Moullin: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Ball: Diseases of the Throat, Nose, and Ear. 2.30 P.M., Operations. Dr. Abraham: Diseases of the Skin. 5 P.M., Lecture:—Dr. S. Taylor: (1) The Significance of Urates; (2) The Significance of a Trace of Albumen.
SATURDAY.—10 A.M., Dr. Ball: Diseases of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Dr. Scott: Diseases of the Eye. 2.30 P.M., Operations.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Cliniques:—10 A.M., Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Medical Out-patient (Dr. T. R. Whipham); Throat, Nose, and Ear (Mr. H. W. Carson); X Ray (Dr. A. H. Pirie). 4.30 P.M., Medical In-patient (Dr. A. J. Whiting).
TUESDAY.—Clinique:—10.30 A.M., Medical Out-patient (Dr. A. G. Auld). 2.30 P.M., Surgical Operations (Mr. Carson). Cliniques:—Surgical Out-patient (Mr. Edmunds); Gynæcological (Dr. A. E. Giles).
WEDNESDAY.—Cliniques:—2.30 P.M., Medical Out-patient (Dr. Whipham); Dermatological (Dr. G. N. Meachen); Ophthalmological (Mr. R. P. Brooks).
THURSDAY.—2.30 P.M., Gynæcological Operations. (Dr. Giles). Cliniques:—Medical Out-patient (Dr. Whiting); Surgical Out-patient (Mr. Carson); X Ray (Dr. Pirie). 3 P.M., Medical In-patient (Dr. G. P. Chappel). 4 30 P.M., Lecture:—Dr. A. G. Auld: Asthma, its Pathology and Treatment.
FRIDAY.—10 A.M., Clinique:—Surgical Out-patient (Mr. H. Evans). 2.30 P.M., Surgical Operations (Mr. Edmunds). Cliniques:—Medical Out-patient (Dr. Auld); Eye (Mr. Brooks). 3 P.M., Medical In-patient (Dr. M. Leslie).

LONDON SCHOOL OF CLINICAL MEDICINE, Dreadnought Hospital, Greenwich.

MONDAY.—2.15 P.M., Sir Dyce Duckworth: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. W. Turner: Surgery. 4 P.M., Dr. StClair Thomson: Ear and Throat. Out-patient Demonstrations.—10 A.M., Surgical and Medical. 12 noon, Ear and Throat.
TUESDAY.—2.15 P.M., Dr. R. T. Hewlett: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. Carless: Surgery. 4 P.M., Mr. M.

Morris: Diseases of the Skin. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 3.15 P.M., Special Lecture:—Mr. Carless.

WEDNESDAY.—2.15 P.M., Dr. F. Taylor: Medicine. 2.30 P.M., Operations. 3.30 P.M., Mr. Cargill: Ophthalmology. Out-patient Demonstrations:—10 A.M., Surgical and Medical, 11 A.M., Eye.

THURSDAY.—2.15 P.M., Dr. G. Rankin: Medicine. 2.30 P.M., Operations. 3.15 P.M., Sir W. Bennett: Surgery. 4 P.M., Mr. M. Davidson: Radiography. Out-patient Demonstrations:—10 A.M., Surgical and Medical 12 noon, Ear and Throat.

FRIDAY.—2.15 P.M., Dr. R. Bradford: Medicine. 2.30 P.M., Operations. 3.15 P.M., Mr. McGavin: Surgery. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 12 noon, Skin. 2.15 P.M., Special Lecture:—Dr. R. Bradford: Diabetes.

SATURDAY.—2.30 P.M., Operations. Out-patient Demonstrations:—10 A.M., Surgical and Medical. 11 A.M., Eye.

GREAT NORTHERN CENTRAL HOSPITAL, Holloway-road, N.

MONDAY.—9 A.M., Operations (Mr. White). 2.30 P.M., In-patients—Medical (Dr. Beevor); Out-patients—Medical (Dr. Willcox), Surgical (Mr. Low), Eye (Mr. Morton and Mr. Coats).

TUESDAY.—2.30 P.M., In-patients—Medical (Dr. Beale), Throat and Ear (Mr. Waggett); Out-patients—Surgical (Mr. Edmunds), Throat and Ear (Mr. French); Operations (Mr. Beale).

WEDNESDAY.—2.30 P.M., In-patients—Surgical (Mr. Stabb); Out-patients—Medical (Dr. Horder), Gynæcological (Dr. Lockyer), Skin (Dr. Whitfield), Teeth (Mr. Baly); Operations (Mr. Stabb).

THURSDAY.—2.30 P.M., In-patients—Medical (Dr. Morison).

FRIDAY.—3.30 P.M., Lecture:—Dr. C. Beale: Ulcerative Endocarditis or Cases of Interest in the Medical Wards.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC, Queen-square, Bloomsbury, W.C.

TUESDAY.—3.30 P.M., Lecture:—Dr. R. Russell: Cerebellar Disease.

FRIDAY.—3.30 P.M., Lecture:—Sir V. Horsley: Surgery of the Nervous System.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Leicester-square, W.C.

THURSDAY.—6 P.M., Lecture:—Dr. M. Dockrell: Baldness, its Causes and Treatment.

CHARING CROSS HOSPITAL.

THURSDAY.—3 P.M., Demonstration:—Dr. Galloway and Dr. MacLeod: Diseases of the Skin. 4 P.M., Demonstration:—Dr. Fenton: Medical. (Post-Graduate Course).

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.

WEDNESDAY.—4 P.M. Lecture:—Dr. Fenton: The Myogenic Theory in Relation to Cardiac Arrhythmia.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.

THURSDAY.—4 P.M., Lecture:—Mr. Fairbank: Surgical Treatment of Paralyses.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. II. of 1907, which was completed with the issue of Dec. 28th, were given in THE LANCET of Jan. 4th, 1908.

VOLUMES AND CASES.

VOLUMES for the second half of the year 1907 are now ready. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half year's numbers are also ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

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TO COLONIAL AND FOREIGN SUBSCRIBERS.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and generally do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, Feb. 20th, 1908.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
Feb. 14	30·17	S.W.	...	73	53	36	45	45	Overcast
,, 15	30·12	S.W.	...	58	51	42	47	48	Cloudy
,, 16	30·06	W.	0·08	81	47	34	35	37	Fine
,, 17	29·61	S.W.	0·23	61	54	37	47	47	Raining
,, 18	29·64	W.	0·31	72	52	44	43	45	Cloudy
,, 19	29·84	W.	0·19	75	53	42	43	45	Overcast
,, 20	29·96	W.	...	52	50	44	45	47	Overcast

During the week marked copies of the following newspapers have been received.—*Yorkshire Post, Standard, Daily Telegraph, Freeman's Journal, Morning Post, Sheffield Independent, Sheffield Telegraph, Daily News, Liverpool Courier, Army and Navy Gazette, Broad Arrow, Birmingham Post, Westminster Gazette, Bristol Mercury, Dublin Times, Glasgow Herald, Wimbledon Gazette, Catholic Herald, Manchester Dispatch, Morning Leader, &c.*

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